Da Cailiḃ na Firmaminnti

7

Na Ceiṫre Dula

Ʒ loir da Dia
da toffaċ ʒan tofaċ 7
da criċ ʒan deireaḋ,
dan neaċ da bi ann riaṁ roiṁ
ʒaċ uili ni,
biaf da fir deif ʒaċ en neiċ 7
dan te naċ roiṫenn ciall
na refun na deannaċta
da fif na ḋa aiċni cade.

Anonymi Elementa Astronomiae
c. 1400

APPENDIX II:

Da Cailib na Firmaminnti

7

Na Ceitre Dula

PREFACE TO THE IRISH EDITION

The wording and spelling of this edition of the Astronomical Tract follow that of Maura Power's ITS publication.[1] The deviations from that edition are few in number and all footnoted. I have corrected a minor printing error from Chapter 16 of the ITS edition. I have also removed one of Power's 'corrections' to the text. Concerning the value of π (Cha 35), Power thought it improbable that the author would have taken this to be 3 rather than $3^1/_7$. Supposing this to have been a scribal error, she made the necessary 'correction' to the Irish text. I have left it at 3 because it is clear from the calculations within that chapter that this was the value employed.

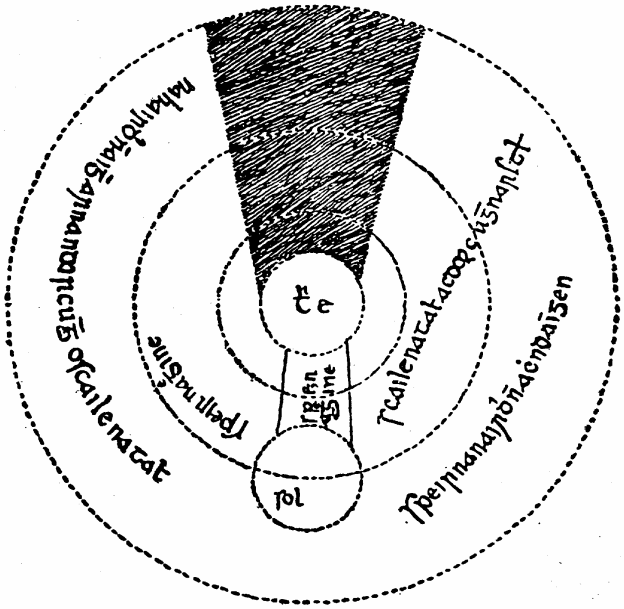
A problem not addressed by Power is the dozen or so corruptions to the text that have found their way into the surviving copies of the Tract. Most of these were identified by O'Farrelly and Close. In places where the text becomes obscure or contradictory, reference to O'Farrelly's unpublished restoration of the Irish text[2] has generally shed light.

These corruptions to the text are addressed in footnotes. I have supplied the likely run of the original work, which in most cases is fairly obvious.

* * *

[1] Power, M, *An Irish Astronomical Tract,* Irish Texts Society, Vol. 14, London, (1914)

[2] O'Farrelly, J. J., *Irish Cosmographical Tract; Transcription of the Irish Text with contractions retained.* (from Stowe B II 1) ms 3A 7, 852, Royal Irish Academy Library (1893) – handwritten, (unpublished).
O'Farrelly, J. J.,(*Seaghan S. Ó Fearghaile*), *Irish Cosmographical Tract; Transcription of the Irish Text,* (contractions in Irish extended, with reference to the Marsh copy & RIA copy 2) ms 3A 10, 855, Royal Irish Academy Library (1893), (unpublished).



Ex., ms 23.F.13, RIA (Chap.17)

Na hairdrennaigh ar na ndorcuzadh o scáile na talman,
'the constellations, on being darkened by the shadow of the earth.'

Spéir na zréine,
'the sphere of the sun.'

Scaile na talman ac dorchuzadh ne rehe,
'the shadow of the earth darkening the moon.'

Spéir na n-ardrennach n-daingen,
'the sphere of the fixed stars.'

GLORIA DEO PRINCIPIO.

Gloir da Dia da tossach gan tosach ⁊ da crich gan deireadh, dan neach da bi ann riamh roimh gach uili ni, bias da sir deis gach en neich ⁊ dan te nach roithenn ciall na resun na deannachta da fis na dha aichni cade.

Et o nar bail leis beith da sir gan e fein dfoillsiugad da na dainib, da mhuin a oibrithe ⁊ a ealadhna do na heolchaib innus gurub as na hoibrithibh da hathontai an toibriteoir ⁊ gurub as na gnimhartaibh da haitheontaidh an tuismigteoir ⁊ is uime sin is dingmala do na heolcaibh dar foillsig a seicreidi gloir do tabairt do tar gach uili ni.

Ma sedh tinnscainter annso ceasta cruaige dosgailte na narsatan ar oibritib da scrudadh. Et co sunnradhach da cailibh na firmaminnti ⁊ da cailib na ceithre dula ⁊ da suigiugad ⁊ da tuismead maille re furacht an tuismightheora aderumni, ⁊ da resunaib rofirinneacha ⁊ darmainntib ecintacha ⁊ da congluaistib dobriste doscailti.

Ocus atait annsa leabhur le celi da fichit caibidil ⁊ as i so an ced caibidil dib .i.

Da cruthugud ⁊ foillsiugad na firmaminte.
Da na ceithre duilibh ⁊ da ninedaib mar dordaidh an tuismigteoir iad.
Da gluasachtaib ⁊ do na naduiribh.
Da naduirib ⁊ do na gluasachtaib.[1]
Do cruinne na ceithre ndula.
Dasaenta na ceitre ndul ⁊ da naduirib.
Da chruinne na talman ⁊ dfis lae ⁊ aithci.
Da claeclogh na fairrgi ⁊ na srothan.
Dexamlacht na talman ⁊ na cnoc.
Dexamlacht na nuscid ⁊ do gluassacht na talman.
Don na chnoc teineadh ata ar lasadh.
Da linad ⁊ da tragadh an mara.
Da tuili srotha Nil san Eigeift.
Da cruinne na firmaminti ⁊ da gluassacht ⁊ da naduirib.
Dimpodh na firmaminte ⁊ na greine.
Da claechlod na firmaminte.
Da cerclaibh ⁊ da linibh ⁊ da poncaibh na firmaminnte.
Dexamlacht eirgi ⁊ dul fai na greine.
Dfis meid na greine.
Da solus an re noc gabus on grein.
Da dorcadus an re.
Da tsolus na nairdrennach.
Da dorcadus na greine.
Dfochainn an re dfaicsin go bec ⁊ go mór ar a primh.
Dexamlacht soluis an re.
Da nuimir cercall an re.
Da da speir ne greine.
Do na huili cercallib ⁊ da ngluasacht.
Da gluasacht na speiri romoire.

[1] This is a transcriptional error by the scribe of ms Stowe B (or the author of this introduction). He has inadvertently repeated the theme of the previous chapter. The likely run of the heading for Chapter 3 would have been; *Do na ceithre primcailibh do na ceithre duilibh.*

Da gluasacht speire na comartad.
Da claechlod na naduredh ⁊ na naimser.
Da nuimir cercall Shaduirn ⁊ na plaineid eile.
Dimpodh Shaduirn ⁊ na plained ele tar a nais.
Da speir na nairdrinnach.
Da nuimhir milteadh a timceall na talman.
Da claechlodh na nairdreannach a nexamlacht na crich.
Do na hocht crichaib soaitreabta an talman.
Don da inadh a fuil an bliagain uile na henla ⁊ na henaithci.
Do na gaethaibh ⁊ da naduirib.
Don toirnidh ⁊ do na nellaibh ⁊ dan feartain ⁊ don teinntigh.
Do na plandaib.[1]

* * *

1. FIRMAMENTUM, EST ETCETERA.

Ata an firmamint co cruinn ar na tuismead ⁊ deradh aici, ca sir follamnugad ag a tuismigteoir fein. Ocus atait airdreannaid a secht speir na firmaminnti mar tairngibh daingne a clar gan gluasacht dilis acu acht gluasacht na cercaille an a fuilid. Ocus as uime sin nach faicear ag gluasacht tar a ceili iat na a neagaidh a ceile ach en ordugad siraigh suthain co comfogus da ceili ⁊ comfada o ceili ag a chonnmail acu caithe. Da derbad co fuil an follamhnugad sin ag a connmail ag tuismighteoir an domhain, ⁊ co mbia co brat ar a oibrechaibh fein, an cursa da orduigh se doibh a tus an domuin, atait gan meallad ca connmail sin co neimheasbadhach.

Da derbadh sin bidh fis gach neich nadurtha ag na heolchaibh sul tigid siad ann, oir ata a fis acu co neimheasbatach sibhal na nairdrinnach ⁊ na plained gacha bliadna ⁊ gacha mis ⁊ gacha sechtmaine ⁊ an gach la ⁊ in gach moimint. Et na egmais bid fis na naimsir fein acu sul tigid siad ann .i. fis tsamraigh ⁊ fogmuir ⁊ geimrid ⁊ earraidh ⁊ fis gach neich is nadurtha da teacht inntu sin; ocus as ardomaint deimhin sin da derbadh co fuil an te da tuismidh an domhan fos ga follamnugad, oir muna beith, da claechleofadais na neiche adubrumar costrasta an toibriugad dinnsemar do beith acu. Et as mar sin da beidis na hairdrinnaigh ⁊ na plaineid uair budh luaithi uair budh maille iat na ceili ⁊ uair ele na comhnaighi gan en cor do chur dibh. Et as ar in nos cedna da ticfadais na haimsera a ninadh a ceile ⁊ da bedis laeite nadurtha budh sia na ceili ann. Agus da rer sin da beidis tortha na talman uair and ar techt ⁊ uair ele gan en raed da techt dibh. Et as mar sin da beith gach uile ni idir nemh ⁊ talmain buaidhertha measgaithi gan iul ag feallsamain na ag eolach cad aderadh ru. Et da ticfadh as sin aris co scrisfaide na healadhna saera da rinneadh, ⁊ ar sibal ⁊ ar comnaidhi ar nuimhir ⁊ ar suigiugad ⁊ ar ordugad oibrigtedh De.

Ma sedh a dachiamaid co fuilid na healadhna saera ann ⁊ co fuil gach uile ni ele co nembuaigertha nemmeascaithi da rer en ordaithi ac tiacht go deimhin an a naimseraibh fein, as as so tricter co fuil an te do crutaidh an doman fos aca ordugad ⁊ ag a follamnugad.

[1] The scribe of ms Stowe B has inadvertently entered; *Do na Plainedaib,* 'Concerning the Planets'. I have restored the intended title to this chapter on Plants.

Do na cethri duilibh ⁊ da ninadaibh ⁊ mar da orduig an tuismiteoir iat.

2. TERRA EST IN MEDIO MUNDI ETCETERA

.i. Ata an talam na ponc cruind a cert medon an domain mar mod liatroide cruinne, gan tsustaint fai, ca congmail, ⁊ ata an tuisci da rer naduir da gach aen leithe de na timceall ⁊ gideadh da tuismaidh an tuismiteoir an cuid tuas don talmain mar inadh aitreabtha do na dainibh ⁊ da na hainminntib nar fed beith beo fa usci. Et ata an taer na timchill ar aen. Et ate an tene na dimcheall a triur. Et ata an firmamint gach aen teabha a timcill an ceathrair sin. Et as i so tuarascbail no ceithre ndul sin .i.

Tuarasgabhail na teineadh .i. corp te tirim loisgnech edrom silteach sogluasta fa fuil an taer.

Tuarascbail an aeir .i. corp te fliuch siltec sogluasta, trom an aithfeghadh na teinedh ⁊ etrom a naithfeghadh an uisci.

Tuarascbail an uisci .i. corp fuar fliuch siltec sogluasta, trom ac fecain an aeir ⁊ edrom ac fechain na talman, fa fuil an talamh.

Tuarascbail na talman .i. corp fuar, tirim, trom dogluaiste ata fon domun uili ⁊ is mar sin as tusca an talamh nan tuisci ⁊ an tuisce nan taer ⁊ an taer nan teine ⁊ in teine nan firmamint oir as i an firmamint as imillige acu mar foillsiges an fidair so tis.

* * *

3. DICUNT PHILOSOPHI ETCETERA.

Aderaid na feallsamain co fuilit tri gluasachta ann .i. gluasacht o meadhon ⁊ gluasacht cu meadhon ⁊ gluasacht a timcill medhoin.

IS e is gluasacht a medhon ann .i. an gluasacht teit o talmain amach go cotrom dinnsaighe gach uile rainn don cercaill timcill.

IS e as gluasacht cu medhon ann an gluasacht teit sis on cercaill timcill go talmain.

IS e as gluastacht a timcill mhedhoin ann .i. an gluasacht noch gluaises da rer na cercaille timcill ⁊ is o na primhgluasachtaibh sin genter gach uili gluastacht ele da fuil is an domhan ⁊ is dib sin gluasacht no ceithre dula, oir gluaisidh cuid aca o meadhon ⁊ cuit co meadhon ⁊ ni gluaisind en raed go nadurtha a timcill medoin acht an firmaminnt na rann da rannaibh. An da duil gluaises cu medhon .i. talman ⁊ uisci, as luaithi an gluasacht go medhon talmain na an uisci. Don da duil gluaisis o medhon .i. aer ⁊ teine is luaithe gluaises in teine o medhon nan taer. Et is mar sin atait na duili gluaises go medhon trom ⁊ na duili gluaises o medhon etrom. Et tuictear mar congluais as na neicib sin gurab e an talam duil as troma acu ⁊ gurab i an teine duil as roetroma aca. Et ge ta an tuisci ⁊ an taer mesardha atorra aga comortus re ceili ⁊ ris na duilib ele, dagabar truma ⁊ etruma innta oir ge trom an tuisci ag a comoradh re haer as hedrom e ga comoradh re talmain ⁊ is mar sin gidh etrom an taer ag a comoradh re huisci as trom e ca comoradh re teine.

Dfoillsiugad an adbair so nis mo dagen fidair annso this scailfis amach brig na raiteadh so. Dagen ar dus fidair na talman ⁊ scribfad A na meadhon ⁊ curfead B litir na mullach ⁊ daden na dedaidh sin cercall na firmaminti a dimcill na talman ⁊ cuirfed C na oirrcher ⁊ D na mullach ⁊ E na hiartar ⁊ F na hichtar ⁊ ar cuma na fidrach atait da corp do na corpaid duilidhi noch gluaises o medon ann na cercaille timcill .i. o A go B ⁊ is iat sin tine ⁊ aer. Et atait an da corp ele gluaises on cercaill timcill go medhon .i. o B go hA ⁊ is iat sin talam ⁊ uisci. An treas primgluasacht ata ann .i. gluasacht do rer an cercaill timcill ⁊ is e sin gluasacht no firmaminnti ⁊ is amlaid gluaises o C go D ⁊ o D go E ⁊ o E go F ⁊ o F go C ⁊ is leor sin do na heolcaib.

* * *

4. CALOR ET FRIGIDITAS, ETCETERA.

.i. Tes fuacht fliche ⁊ tirime as iat sin as ceithre primcaile do na ceithre duilibh ⁊ atait na naicidib doscailte uatha ⁊ atait da cail gnimhacha dib so .i. tes ⁊ fuacht. Ague as uime aderur caile gnimaca ru oir an tan glacmaid iat foillsigid siat duinn an uair sin gan fuireach annsa momint a nglactar iad a mbrig fein; oir an tan glacmaid an tene foillsigid an uair sin dun brig a teasigachta ⁊ as mar sin an trat glacmaid an cuisne reoigh foillsigid se duinn an uair sin gan fuirec sa momint cedna brig a fuardhachta. Et as i cuis fa mothaigmaidni na neice ainmesarda sin naduir mesarda da beth againn fein.

Et atait in da cail ele dib sin fuilngtec ⁊ is uime aderar caili fuilngtaca ru ar son gan cumhachta dfoillsiugad an uair sin ga nglacadh; oir an trath glaccamaid raed fliuch no raed tirim ni mhotaigmid a fliche na a tirmigacht co hobann mar mhothaighmid teas na teineadh no fuardhacht an cusne. As i sin an cuis fa nabartar blod do na cailib sin do beth gnimhach ⁊ blod fuilngtec. Et ata gach uile corp o speir na teinedh anuas cumaisce astu so ⁊ atait siat fein neamhcumusca a negmais co nabartar a mbeth cumasca as a cailib fein mar ata an teine te tirim cumusca as an da cail sin oir as iat an da cail sin tigernaighes is an teine. Et as a tirime ⁊ a fliche cumuisgter an taer oir as iat sin tigernaighes ann. Et as mar sin ata tigernas an da duil ele timcill a caili fein. Et ge tait na ceithre duili so cumasca as na primcailib aderar neamchumasca ru a naithfeghadh na corp nduilita cumuscter asta fein. Et as mar sin atait an ceithre so cumasca ⁊ neamcumasca le ceili. Neamhcumasca ag fecain gach neich cumaister asta fein. Cumasca ac fecain na primhcailedh ata da ririb. Et mar sin as coir gluasacht nemcumusca da beth ag an corp neamcumusca ⁊ gluasacht cumasca da beth ag an corp cumusca.

Et is follus gac uili corp a tigernaighinn teasigacht as o medhon suas gluaises. Et gach uili corp a tigernaiginn fuardhacht as dinnsaighidh medhon gluaises. Et as e an tes oibriges edromacht is na corpaib nadurtha. Et as i an fuardhacht oibriges tromdact ⁊ is i an tirimaigeacht oibriges luas cumscaithi dinnsaidhe an inaidh nadurtha is na corpaibh edroma. Et mar sin as i an fliche oibriges maille cumscaithi is na corpaibh an a mbi. Et as na raitibh sin timsaigter gorab naduir da gac uili duil dib sin comnaighe do denamh a na ninadaib nadurtha fein a na fuil cric a ngluasachta fein, oir da curtai duil aca sin da hainndeoin as a hinadh nadurtha fein amach da tarrongadh a nduchas aris dinnsaighe an inaidh cedne.

* * *

5. TERRA EST IN MEDIO, ETCETERA

.i. As amlaidh ata an talam a cert medhon na firmaminti a fidhair dul sis na corp trom mar sheantrom .i. ponc medhonach a raed crinn. Et mar adubramar as e inadh nadurtha an usci beit a timceall na talman ⁊ da fadadh slighe gan oilbeim on talmain, o ta fein na corp trom siltec siblach ni anfadh co roitfedh seantrom na talman ⁊ danfad annsin oir as e sin, mar adubrumar, inad deiginach sibail na corp trom. Et atait ranna an usci ac dinge a ceili da dul tar a ceili diarraidh seantroim an domain mar inadh nadurtha doib fein da ligeadh daingne na talman doib. As egin, o ta an talam comcruinn daingean a gabail risin uisci gan a dul cum an tseantruim, co fuil an tuisci comcruinn a dimceall na talman ⁊ as mar sin ata fidair cruinn ag an da duil ele gluaises suas on tseantrom co ruic an cercaill timcill.

Oir ata an tene ar son a hedruime ac tarraing suas no co ngabann cercall daingean dotruailligte an re ria ⁊ o nach fadhann slidhi tairis do coimed ⁊ da comhdaigh hi fein fo ascaill cruinn na cercaille sin ⁊ as uime sin as egin di fein beith cruinn mar ata cercall an ré cumdaighes astig innte fein hí. Et as i an cercall sin as re deridh gluasta na corp nedrom. Et as e ni doni an taer cruinn, druim an uisci cruinn sa glotain ichtaraidh suas aige ⁊ an cuit uachtarach de fein sa glotain ichtaraidh don tene; ⁊ o ta an tene ⁊ an tuisci comcruinn mar da derbamar as egin dan aer ata ar na cumdach etorra beth cruinn da rer a fidrach sin. Et as amlaid ata an suighiugad sin na ndul andluite sin a nglotain a ceili nac feadann ni ele beth aturra ⁊ is mar sin nach fedann inad folamh beth sa domhan uili.

* * *

6. NOTUM EST UNUM QUODQUE QUATUOR ELEMENTORUM, ETCETERA.

As follus gach duil do na ceithre duilib na naduiribh ⁊ na ninadaibh ⁊ na ngluasachtaibh da beith contrara da ceili, oir idir gach ni da ngluaisinn o medhon is i an tene as roluaithi acu ⁊ mar sin idir gach ni da ngluaisinn co medhon as e an talam as roluaithi acu, ⁊ is mar sin ata an talam ⁊ an teine contrara da ceili ar son caili teasigheachta na teinedh ac oibriugad edromachta innte ⁊ ar son caili fuardhachta na talman ag oibriugad truimidheachta innte. Et tuig an tan aderar talam ⁊ teine no da duil ele da beith contrarda da ceili gorab iat caili na ndul tuicter an tan sin da beit contrartha da ceili ⁊ nach iat a sustainnte. Oir adeir an feallsam in *Librer Praedicamentorum; Substanti nihil est contrarium,* - oir ni fuil en ni contrarda ag an tsubstaint.

Oir is uime sin an trath aderar an tene da beth te tirim ⁊ an talam fuar tirim ata tes ⁊ fuacht in da duil sin contrara da ceile ⁊ atait aentaghach da ceile oir is i in tirmigacht oibrighes luas indtu.

Et is mar sin ata an taer ⁊ an tuisci co haentadach ⁊ co hasaentadhach da ceili ⁊ atait co haentadhach is na cailibh fuilngteca .i. an fliche noch oibrighes a moille innta ar aen. Et atait asaentadach da ceili is na cailib gnimaca .i. a teasigacht oibriges edromacht is in aer ⁊ a fuardhacht oibriges tromidacht is in usci. Et as mar sin ata an tene ⁊ an tuisci co hasaentadach da ceili a na cailib gnimhacha ⁊ fuilngteca, oir as amlaid ata an tene te tirim luath edrum ⁊ is amlaid ata an tuisci fuar fliuch mall trom. Et as follus fa deoigh na neice ac a fuil gluasacht direach co nanait inadaib nadurtha

fein acht muna curtar as da nainneoin iat. Et an trat claechligter duil dib an duil ele tri nert na dula sin no an trat curter duil acu da hainneoin as a hinadh nadurtha fein, mar as tusca dagib cuis no becan cunganta le no gan gabail re doni caisimpodh casluath obann dinnsaige a naduir ⁊ a inaid ducusa fein.

Et as follus aris gurab te gach uili ni gluaises o medhon ⁊ gorab fuar gach uili ni gluaiseas co medhon; et gorab tirim gan comortas ris gach ni luataiges an gluasacht ⁊ gurab fliuch gan comortas gach ni mallaighes an gluasacht.

Et as mar sin da thuismid ⁊ dordaigh an Tusmigteoir Beannaithi an doman na ceithre duilibh.

* * *

7. ARGUMENTUM AD ROTUNDITATEM TERRAE, ETCETERA.

As arrdamhaint deimin domeallta do dearbad cruinne na talman na srotha da beit co siblach silteach ar fud aithchi na talman. Oir da mbeith an talamh na clar comtrom gan atmaireacht ann, mar adubradar na haineolaidh, co ningnad an fertainn thig as na nelaib o tigid na srotha enloch mor fairgi comnaidhe ar agaid na talman ⁊ ni rithfedh o inadh co hinadh mar dani anis. Ma sedh o ritid ⁊ nach anann a nen inadh, tuicter co deimhin co fuil cruinne ⁊ atmairecht is in talmain. Arrdomaint ele da derbadh an neith cedna, da ngluaistea o medhon an domain co fairrgi budh tuaigh da foillseocaidi doit annsin retlanna nach facaid tu riamh a medhon an domhain ⁊ da foileocaidi ort blodh do na retlannaibh theas daconncadais a medhon an domuin. Mar sin da nernta an sibhal cedna budh dheas da foillsceocaidi duit retlanna nach facais don taeb tuaidh na a medhon an domhuin ⁊ do foileochaidi ort na retlanna doconncadhais is na hinadaibh sin.

Ma sedh is deimin gorab i atmhaireacht na talman ag eirghe tar teis annsa tsibal a mbi foillsiges duit na retlanna bis romat ⁊ ceilis ort na retlanna bhis tar teis.

Tuilledh ar in adbar cedna .i. gach uile inad a mbi tu don talmain daci tu cuid egin dan firmamint nach faicaid tu a nen inad ele ⁊ derbtar as sin co fuil an boga ata a timcill na talman comhcruinn ⁊ go fuil an talam mar sin ar a lar. Et adeirmaid fos cum an adhbuir cedna co foillsigenn an grian ar gach sibal da ndenann a timcill na talman an leath bis ar a comhair don talmain co direach ⁊ gorab e an solus sin bis idir an grein ⁊ talmain as la ann co brach ⁊ co mbi an leth ele don talmain dorca da sir o sgaili na talman ⁊ is e an scaili dorcha sin as aithci ann go brac ⁊ is mar sin gibe siubhal do ni an grian a timcill na talman leanaidh an la hi ⁊ teitidh an aithi roimpe don taib ele don talmain.

Et mar sin na daine as cinn a nimtigheann grian dacid sin grian ⁊ la ⁊ an buidin bis don leth ele don talmain dacid siat retlanna ⁊ aithci ⁊ mar sin ni fedtar na neithi sin dfaicsin ar en slighi co brach .i. grian ⁊ retlanna aithci ⁊ la, oir an trath bis la againne ar uachtar talman bigh aitci fo talmain ⁊ is mar sin re na impodh. Grinnigh co maith an focal so adubart .i. fo talmain. Oir gach uili ni ata tis fo talmain as e an talam e no rann da rannaibh. Et gach uili ni ata gac aen taeb don talmain on talmain amach as tuas ata. Et as mar sin ata an talam na enur guna rannaib this ⁊ gac en ni ele

doibrigthib De gibe taeb don talmain a mbid is tuas atait. Et as mar sin gibe inad don talmain ar a mbid daine na seasamh as suas bid a cinn ⁊ sis bid a cossa. Et gibe neach aderadh an talam da beith na clar comtrom gan atmairecht ⁊ an grian deirgi da taib de ⁊ a dul fai don taib eli adeirmidni nach fedtar sin da beit na firinne ⁊ nac hedir resun na arrdomaint dfagbail da derbad sin. Oir da madh fir an baramail so da cithfi co mbedh an grian bec ag erghi ⁊ gach dul suas da denadh ⁊ gach foicsi duinn da tuicfadh dacitfi duinn co mad moidi hi ⁊ as follus da gac eolac ar doman nach fuil sin na firinne oir daciamaid corub comtrom a meid a noirrcer ⁊ a niartar ⁊ a mullach an domuin. Et as sin derbtar an talam ⁊ cursa na greine a timceall na talman da bet comcruinn ⁊ da cur sin a ceill ni bhus follse dagen fidhair iomitrici annso tis ⁊ dagen ar dus cuma cruinn cercaille na talman ⁊ scribhfad a medhon an a sentrom E ⁊ scribfaid me na timcill sin cercall as mo na sin amail cercall na greine ⁊ cuirfead na hiartar A ⁊ na mullach B ⁊ na oirrcer C ⁊ scribfad cercall bec a cosmulus cercailli cuirp na greine fare gac litir aca sin ⁊ tarrongad tar eisi sin tri line o tsentrom na talman co cercaill timcill na greine. Line acu sin co hA, an dara line co B, an treas line co C. Et as follus da gach neach smuainteocas iat co fuilit na tri line sin comtrom comfada re ceili.

Ma sedh as comfada comtrom o gach aen an talamh gibe inad a mbia an grian ag eirgi ⁊ a dul fai ⁊ a mullach a cercaille ⁊ is mar sin as follus co fuil an talamh ⁊ cereall na greine a dimceall na talman comtrom leth ar leth. Et gibe neach aderad mar arrdamhaint a na agaid so co faicter an grian ag erghi ⁊ ac dul fai co follus nis romho na mar doci a mullach medhon lai ⁊ gurub as sin tuicter gorab faidi uainn i a medhon lae na is na hairdib ele sin ⁊ gorab e sin derbas co fuil an talam na clar comtrom gan atmeracht da bet ann, adermid co himcubaid da tabairt solaidi don arrdamaint sin co tecmann sin co minic ⁊ nach tecmann da sir ⁊ an trath teagmas as i so an cuis fo tegmann. An grian ag ergi ⁊ a dul fai, togaid si suas na fliucadain ⁊ an fertain ⁊ eirgid dethaighi dorca fliuca co himard adrinn ⁊ hi fein, ⁊ annsin an trath fecamaid ar in ngrein lethnaigid ⁊ remhrigid an smuit sin daciter speir an radairc intu fein ⁊ mar sin da rer corpurdachta ⁊ talmanachta na smuiti sin, daciter an grian trit an smuit sin nis mo na mar dachitfidi í muna beit an smuit sin ann. Et an trath gluaises an la ⁊ bis an grian a mullach na firmaminti gan smuit adrainn ⁊ hi as annsin da citer hi na med coir fein.

Et as follus a eisimlair sin is in duine lomnoch fo uisci, oir dar leis an radarc as mo fa uisci e na don taib amuith duisci. Gidheadh ni fuil da derbad annsin acht an tuisci fliuch tiugh ac lethnugadh ⁊ ac ramrugadh an radairc ann ⁊ a bacail de dul co seim na naduir fein dinnsaidhi an duine. Et as i an cuis cedna dabeir corob mo ⁊ gurab roime daciter ni tri gloine na don taeb amuit di. Et as uime sin na seandaine o mbi a radarc a dul nac fetaid litreacha caela da legad gabaid spechlai glaine cucu da reamrugad na litrech ledhaid ⁊ as i an cuis cedna dabeir ar in grein a faicsin mocrac ⁊ um tratnona nis mo na a medon lae mar adubrumar.

Et gibe aineolach aderad ani cedna .i. an talam da beth na clar comtrom ⁊ an grian a na cercaill cruinn a timcill na talman ⁊ co faicfidis daine an domhain co coitceann hi isin en uair fa nereochadh a nen inadh amhain aderamaisne go mad breg sin da nabartaidh. Agus da cur so a ceill smuaintidh da cathair at inntinn fein .i. catair acu a noirrcer an domhain ⁊ cathair ele a niartar an domain ⁊ smuaintidh da mbeith an talam na clar comtrom co nematmar mar adeir an baramhail so costrasta co faicfidis lucht catrac oirrcir an domain an grian a fogus doib fein ag erghi a meid moir ⁊ tar eis a

cercaille da sibal co faicid i a dul fai tiar a med o rolugha na sin. Et as mar sin re himpodh: - lucht catrach iartair an domhain dacitfidis an grian ag ergi dhi a meid big ar son a fad uata ⁊ ac dul fai dhi laim riu fein ar son a foicsi doib a meid bud romho na sin. (. . .)[1] Et as mar sin dacitfidhi da lucht na catrach oirrceraighi co madh girra leat tosaid an lae na a leth deighinach. Et ar an innus cedna dacitfidh da lucht na catrac iartaraighe co madh girri leth deirigh an lae na leth tosaigh. Et ata a deimhin againne ⁊ ac na heolcaibh co neamcunntabartach gorab comfada an la gaca leiti don ponc inmedonac an lae ag an da catair sin ⁊ in gach inadh ele is in domhuin ⁊ gorab e secran ⁊ easbaigh eagna tuc an baramail sin da tobairt. Et as an comtromacht sin rainn tosaig ⁊ rainn derigh an lae derbtar co follus an grian da beit ac sibal a cercaill cruinn a timcill na talman cruinne.

Et dfoillsiugad an adhbhair so nis mho ⁊ da scris na baramhla sin dagen fidhair iomitre annso this. Et tarrongad ar dus line direc re nabartar aigid na talman ⁊ tarrongad os a cinn sin cercall re naibeoir sligthi cursa na greine 7 dagen fidhair cathrach a cinn oirrcerach an line ⁊ scribfad A litir as a cinn ⁊ da den sa cinn iartarach don line cedna fidair catrac ele ⁊ scribochad B os a cinn ⁊ scribocad C a ponc eirgi na greine ⁊ D a ponc a dula fai ⁊ E a medon lae na catrach oirrceraidhi ⁊ F a medhon lae na catrach iartaraighi di. Ma sedh an trath eirges grian a ponc C ⁊ teit si co hE ⁊ teit ced leth lae na catrach oirrceraighi tort ⁊ bid an dara leth o E co D gan tiacht ⁊ aris an trath eirghes grian a ponc C ⁊ teit si co F teit ced leth lae na catrac iartaraighe torrsa ⁊ bid an dara leath o F co D gan tiacht; da rer sin beith leth bus rofuidi na ceili ag la gac catrach aca sin oir is faidi co mor o E co D, noch is cuit deiginach da lo na catrach oirrcearaidhi, na o C co E, noch is cuit tosanach da lo na catrac cedna. Et aris as faidi da mhoran o C co F, noc as cuit tosanach da la na catrach iartaraidh na o F co D, noch as cuit deiginach don la cedna ⁊ is follus do gach neach is in doman lenab ail a fecain co grinn nach fuil si na firinne. Ma sedh as seacranach na raiti sin as a tic sin .i. co fuil an talam na clar comtrom, gan atmaireacht ann, ⁊ is uime sin adearar ar lorg na firinne co fuil an talam atmar comcruinn.

Et da derbadh gorab fir sin, ni hinnann inad a teit an grian fai da dha cathraigh san doman, oir mar claechliges tu inad, claechligidh tu dul fai na greine duit. Da derbadh sin da mbeitea a cathair Iaruscalem, da racad an grian fai duit ac an Roimh ⁊ da mbethea annsin da rachadh si fai duit a niarthar na Frainnce ⁊ ar mbeth annsin duit da racad si fai a niarthar na Spainne. Et tar eisi sin dfaileochadh inad egin don fairrgi thiar ort ⁊ da coinneomhadh an fairrgi tu ⁊ an grian da leanmhain, da claechleofad si dul fai gach nen la da mbeththea ca leanmain no co neachad si fa deridh duit fai is in inadh a facaid tu ag erghi hi an trat do bi tu a cathair Iarusalem.

Et as dearb nac fuil dexamlacht sa dul fai na greine acht atmaracht na talman a sirteacht adrainn ⁊ i, oir da mbeth an talam na clar comhtrom amail adubairt an baramail o cianaib, ni beth acht en inad a nereochadh grian da dhainib an domain ⁊ en inad ele a racadh fai. Ma sedh o ta imad na ninad ann a nerginn si ⁊ a teit si fai, as egin co fuil an talam comcruinn ⁊ na fuil se na clar comtrom.

Ma sedh an siraidhi bunaid dorduig mar sin e, go roib se bennaithi tre bithu.

[1] It appears that an entire line may have slipped out of the transcription at this point. See the relevant footnote in Chapter 7 of the English translation in Appendix I.

8. MARIA ET FLUMINA DIVERSA LOCA MUTANT, ETCETERA.

An fairrgi .i. claechligid an fairrgi ⁊ na srotanna i moran dinadaib ⁊ ni follus sin co tic tar eis morain da cedaib bliadan. Agus as amlaid so tic an claechlod sin .i. mar brisid na huisceadha na cnuic, tuitidh talam na cnoc a nichtar na nuiscid ⁊ linaid inad an uisci, ⁊ o facaid a ninadh fein co hainneonach is egin doib dul a ninadh eli a na fadaid slige. Et trit an cuis sin na catraca ⁊ na bailti ⁊ na crica a mbi aitrebh na ndainedh a ngleanntaib ⁊ a ninedaib isle a fogas na fairrgi, tic an fairrgi torrsa ⁊ baidhidh si iat. Et as i an fairrgi tic as na nelaib as adhbur do so, oir an trat tites, bigh a sir rith ar fud na talman ac tocailt na talman ⁊ gach ni as sooscailte ⁊ is laigi dageibh is in talmain, berid se o inad co hinadh isna srotaib ⁊ fuadaigidh nert na srotann na nethi cedna sa fairrgi ⁊ lintar dib sin ichtar na fairrgi ⁊ is uime as egin dan fairrgi an tinad sin dfagbail ⁊ dul a ninadh eli. Agus brisid cnuic an inadh cum a teid ⁊ linaid na gleannta ⁊ mar sin claechlighter inad aitreabtha ⁊ sealbta na ndainedh .i. na catracha ⁊ na crica ⁊ na cnuic ⁊ na gleannta.

Oir as ni nadurtha don uisci, o ta se siltec, gan beth da sir a nen inadh ach a dul o inadh co hinadh. Agus na dedhaig sin, an talam as laigi, berid na srotha leo san fairrgi e ⁊ tre beth co rofada do ann, calcaidid se ann ⁊ cruadhaigid ⁊ dani cloch de ⁊ le sirbualadh na tonn fai ⁊ tairis da sir, snoighter ⁊ minaiter na clocha ⁊ curter fidracha egsamla orra, oir daniter blodha acu crinn ⁊ blodha letan ⁊ blodha fada ⁊ blodha ger.

Et as mar sin, an gaineamh ⁊ na clocha etroma, berid na srotha leo sa fairrgi ⁊ crinnigid cum a ceile o imbualadh na tonn amuith ⁊ tar eis morain da cedaib bliadan, fasaidh se ⁊ eirgidh se suas os an fairrgi ⁊ doni cnuic de ⁊ sleibti ⁊ cuiridh an fairrgi ni de dinnsaidhi na crich ele ⁊ as e as adbur as a mbainter na catraca ⁊ na crica. Et da derbad sin gurab fir e, daciter a moran dinadaib dachuaidh fon fairgi tigi cloch ⁊ caislein ⁊ tempaill ⁊ cloca snaighthi ⁊ clair ⁊ a lan da comartaib nemcunntabartacha ar i ndeimniter aitreb daine da beit uair egin is na hinadaib sin.

Ni ele da derbadh an raeda cedna, dagebtar co follus a mullach na cnoc ⁊ na sleibtead cassain ⁊ sligteca na fairrgi noch is cosmail risna himaraib ⁊ risna eitrib beca cama daciter a ladh na mara deis na fairrgi da dul amach ⁊ leis sin dagabtar a lan da sligeanaib ⁊ da miniasgaib mara ar calcadadh ⁊ ar cruadhugad ⁊ ar ndenum cloch dib isna hinadaib cedna. Et ar an nos cedna doni an fertain slebti ⁊ gleannta an domain, oir an trat rithes an fertain a ninad a fadhann an talam lag, toclaidh e ⁊ doni eitrighi ann ⁊ tuitid bruach an eitrighe gaca leiti, idir gaineam ⁊ talmain is in eitridhi leis in uisci ⁊ berid an tuisci sin leis dinnsaighe na srothann ⁊ berid na srotha sa fairrgi ⁊ le himad fertana na haimsiri rofada ac sirtuitem is na heitrib sin ⁊ ac sirbreith na talman ⁊ an gainim leo doni gleannta mara do na heitrib sin ⁊ fa deoid factar an talam na cnocaib ⁊ na sleibtib mora atarra ⁊ is mar sin dordaigh tuismiteoir beannaiti an domain ani sin.

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9. CALOR ET FRIGIDUS OPUS VEHEMENS IN TERRAM, ETCETERA.

As dasachtac mear na gnimharta dani fuacht ⁊ teas a talmain, oir isin tsamrad, an trat teighes teas na greine agaid na talman, o nach fuilingid da ni contrardha beit a nen inadh, tethidh an fuacht roimh an teas a ndoimne na talman ⁊ fuarid sin an tuisci dageib fo talmain ⁊ as uime sin bis uisci na tobar fuar is in tsamrad, ⁊ ar an adbar cedna, le fad na greine uainn is in geimridh gabaid an fuacht nert annsin ar uachtar na talman so uile 7 cuiridh an teas a teitead a ninne na talman astech ⁊ is uime sin bid uiscedha na tobar te sa gemrid. Agus an trath bis an fuacht sin a ninne na talman isin tsamradh co nertmar, calcaidh se ⁊ cubaid se e fein annsin o nac leiginn daingne ⁊ dluithi na talman do dul amach, ⁊ gac fad da mbia ann as moidi a nert ⁊ a brig. Et annsa geimred, an trat cuires fuacht aitchi na talman an teas asteach a ninne na talman ⁊ dageib ar a cinn astigh an prisunach .i. fuacht inne na talman, gnimaidhid ar a ceili ⁊ dab ail le gac neac acu a celi da scris ⁊ crotaidh an talam ⁊ is risin crothad sin aderar *terra motus* .i. crit na talman ⁊ tic as in crotadh sin co ngerrtar ⁊ co mbrister an talam ⁊ teit gaeth mhor maille re toirnigh ⁊ re foghar as in brisid sin ⁊ teit crefoe ⁊ cloca leis ⁊ gibe duine no ainmigi no caislen no raed ele daingin da mbeanfad cloc aca sin, ni gebhad uatha gan dul trit.

Et as minic tegmas a nuair *terra motus* co ndorcaigter an grian ⁊ is e ni o tic an dorchadus sin .i. an gaeth tren tic as an brisid sin na talman, seidid si co nertmar comachtach moran cannuir ⁊ crefoigi uaithi suas is in aer ⁊ bigh an cainniur sin mar nel idir an talam ⁊ an grian ⁊ boinid solus na greine do na cineadhachaibh na timcill.

Agus uair eli brisid an *terra motus* an talam fon fairrgi ⁊ seidigh an gaeth tic as an uisci suas fon aer ⁊ cuiridh sin an fairrgi a fiuchadh adbul mhor. Et rebaigh an crit cedna na cnuic ⁊ na sleibhti an trat bis adbhur futa innus co fagann fuachaisi doimne duba innus nac faicter grinneall tar eis.

Et na dedaid sin tic la egsamlacht an inaid a mbid na huiscedha examlacht an blassa da beth orra, or gid en tustaint ata ag na huiscedaibh uili, gabaidh examlacht aicidec cugi da rer blassa an talman a mbi. Et as uime sin an tuisci bis a ninadh clocach gainmech, blas milis bis air ⁊ an tuisci bis a talmain goirt, blas saillti bis air ⁊ an tuisci bis a talmain labain blas tragain bis air ⁊ an tuisci bis a talmain serb an a mbi clocha sulfuir no ailimi, no an tinadh a mbi mianach prais no umha no neici serba eli, blas serb bis ar in uisci sin. Agus mar sin da rer examlacht aicidi blassa na talman a mbid na huiscedha, claechligid an tuisci aicid blassa.

Et na diaidh sin na srotha bis ac sibal ar uachtar talman, an trat tegmas talam lac soscailti orra, tollaidh siat e ⁊ doni sligteca diamra doib fein ann fo talmain no co tecmann talam doscailti orra nac liginn tairis iat don taeb so na don taib eli. Et o gabtar mar sin riu tis brisidh an talam os a cinn suas ⁊ doni toibreaca dib da rer meidi no laiged na srotann fo talmain o tigid, no da rer imaid na fertana a tigid na srotanna, oir is da rer sin linaid ⁊ traigid na tobraca.

Et as e ni o tie sailltecht usci na fairrgi .i. on a arrsaigecht fen ⁊ o sirbualadh na tonn fo na clocaib ⁊ o sibal na greine riam os a cinn ⁊ o innarbad na codac as millsi don uisci aisti o teasbac na greine. Oir tairrngid teasbac na greine an cuid as seime ⁊ as millsi duisci na fairrgi suas a nelaib an aeir ⁊ is de sin dani an drucht ⁊ in fertain ⁊ in sneachta ⁊ an cloitshneachta ⁊ gac ni eli da tic anuas. Et facaid tis an rann is truime ⁊

is reime ⁊ is talmanda ⁊ is serbhi ⁊ is on naduir cedna bis fual an duine serb, oir an toibriugad dani grian os cinn na fairrgi as e sin doni lionn ruad os cinn an fuail ga sithlod ⁊ ac tarraing na rann seimh uadha.

Et as si an cuis cedna dabeir ar an usci dageib moran da berbud beit serb, teasigacht na tened ic tarraing na rann seimh uadha. Et an trat dageib an tuisci saillti sin na fairrgi moran da berbad ar teni no o grein a tirtaib te calcaidh se ⁊ cruagaid ⁊ impoidid se a naduir na talman ⁊ is e sin an salann tig cugainn. Et as e doni in toibriugad sin .i. ro berbad na tineadh no na greine a tarraing na rann seimh uadha uili ⁊ ar na sitlodh mar sin ⁊ ar na cruthugad fein ⁊ ar na inntod a naduir na talman da rer corpordachta. Agus duair ann ceangailter na huiscendha millsi ⁊ co sunnradach uisci na srotann o dasacht na fuardhachta ⁊ doni eigrid dib ⁊ ni leiginn an teas nadurtha ata sa fairgi, ⁊ beit na comnaige di, an ceangal sin da gabail cuci on fuacht oir is i naduir na fuardhachta, gach ni roites da cheangal ⁊ naduir an teasa gac ni ceangailti da scailid, mar aderaid na feallsamain.

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Don da cnoc ar lasadh atara(?) .i. Etna an Sisaile i Ueranes is in Apaile a inad(?) na sulfure.

10. DICO QUOD OCCACIO HUIUS IGNIS EST ETCETERA.

Aderim gorab e med na sulfure as adbur don teine bis ar lassadh da sir ⁊ is mar so as e .i. an trath tinnscnas an teine gnimh da deanam a cuislennalb na sulfaire fo talmain, ni fanann ac sir lasadh na sulfairi ⁊ talman roimhe co domuctha.

Agus is mar sin doni puill ⁊ cabain roimhe sa talmain ⁊ in trat tair le an tsulfur ata do naduir ann co fasann aris. Et an tan fases impoid aris ⁊ loisgidh aris e ⁊ bith an fas sin na sulfuri ⁊ losgad na teinedh ar fas tri bithu sir ⁊ teilgidh an lasair, mar eirges aisti, a lan da caeraib 7 da caebaib teined tic o folad na sulfuri aisti amach ⁊ cruinnigid sin ar en slighi ⁊ doni sleibti dib. Et as minic cluinter fogar mor aduatmar on gaith ac dul asteach is na fedanaib sin ⁊ a seidedh leis in lasair ac dul amac. Et atait na huiscedha tusmigter o na hinadaib teinntighi sin te, oir mar adubramar gabaid na huiscendha aicid on inadh a ticid.

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11. LUNA VISIBILITER IN MARE, ETCETERA.

.i. Gnimhaidhi an re co follus is in fairrgi ⁊ is na neicibh fliucha ele, oir aderaid na feallsamain nach anann an fairrgi ac sirlinadh on trat bis an re a ponc oirrcher a cercaille conic an trat fa mbinn se a mullach a cercailli ⁊ nach anann aris as sin a sir tragadh no co mbi ac dul fai a ponc iarthair a cercailli. Et nac anann as sin aris ac sirlinadh no co mbi an re a ponc medhonac a cercailli fo talmain. Et as sin aris nach anann ac sir tragadh no co mbi a ponc oirrcerac a cercailli tinnscnaidh annsin aris linad mar darinne roimhe.

Et mar sin da rer eirghi ⁊ dul fai an esga, ni anann an fhairgi co brac ac linadh ⁊ ac tragad ⁊ an trat bis an re a nenceime ris in ngrein is annsin as mo ⁊ as tinne a solus .i. a tosac gacha mis ⁊ is annsin as ro mho tragad ⁊ linadh na fairrgi. An dara cuairt as mo tragad ⁊ linadh na fairgi .i. a medhon gacha mis an trat bis solus lan ac an re laca rinne, oir as annsin frithbuailter solus na greine anuas on re dinnsaighi na fairrgi ⁊ oibrigi sin tragadh ⁊ linadh na fairrgi.

Agus as mar sin foillsiges an re na gnimharta cedna a smir ⁊ a nincinn ⁊ a fuil na ndaine oir medaigter ⁊ laidigtar na tri neici sin a tosac ⁊ a medon gacha mis da rer cursa an re. Et da rer sin ni tigid eslaini na droca fola mar atait neascoidi ⁊ neici iomda eli ach a tosach ⁊ a medon gaca mis.

Et as follus aris gnimarta an re da rer bisidh ⁊ dombisidh is na cucumeraib ⁊ is na cucurbitaibh ⁊ is gac en ni a tigernaiginn an flice da rer cursa an re. Et is si so a cuis nadurtha sin, oir ata tigernas ag an re ar na neicibh fliucha, ⁊ ar uisci na fairgi co sunnradach, mar ata ag adhamas ar in iarann, oir mar tairrnges adhamas an tiarann cuici as mar sin tairrnges an re uisci na fairrgi ⁊ is ris sin aderar linad na fairrgi. Et an trat scuires se don tarraing sin impaid an fairgi dinnsaighe a hinaid fein aniar ⁊ is ris sin aderar tragad.

Et as folluse an tragad so ⁊ an linad a noircer an domain ⁊ na iartar na sa Muir Ruaidh no a Muir na hAfrici no isna maraib eli tic on fairgi moir, oir is sibal direach ata ac blodh acu sin siar gaca dirga, ⁊ soir gaca dirgha linas blod eli acu tre brig oibrigthi an re ass a cinn. Et as uime sin nac follus an linad sin nan tragad ar cladacaib na mara annsin.

Agus dfoillsiugad na noibrigthi sin an re a timcill traigti ⁊ linta an mara, dagen fidair iomitre annso tis ⁊ dagen ar dus fidair comcruinn na talman ar na roinn a ceithre rannaib comtroma ⁊ scribocad na ceithre litreaca so na ninadaib fein a timcill na ceithre rann sin .i. A, B, C, D, litre ⁊ scribochad a timcill na talman samail cercaille an re ⁊ cuirfed E na hoirrcer ⁊ F na medon mullaid ⁊ G na hiartar ⁊ H na medon ictar ⁊ dubochad leth na fairrgi don talmain ⁊ faicfead an leth ele tirim, geal. Ma sed an trat bis an re a noircer a cercailli fein a ponc E co direc ar comar A, as annsin tinnscnas an fairgi linadh ⁊ ni anann ac sir linadh co soitinn an re a ponc F, ata ar comair B. Agus is annsin tinnscnus an muir tragadh ⁊ ni scuirinn ac sir tragadh no co roitinn an re ponc G ata ar comair C. Et bidh sin ac sir linad no co roitinn an re ponc H ar comair D ⁊ bidh aris ac sir tragad no co roitinn an re ar comair A.

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12. SOLENT QUIDAM IMPERITI ASSERERE, ETCETERA

.i. Aderaid blodh do na eolcaib tuile tsrotha Nil do techt a fertanaib mora noch feras a cricaib ciana ⁊ mar linas an sroth, sceighidh amach ar fud ferainn na hEigifti ⁊ ani dani an fertain do na cineadacaib eli, is e sin doni uisci srota Nil do na hEgeftecaib. Et adermuidne nach fuil ardhamaint na resun acu san da derbad na nethi sin ach baramail amhain, oir mar dacit siat srotha eli an domain da linadh o fertanaibh, sailid gorab mar sin linas srut Nil.

Derbocamaidni anois gorab breg an baramail sin, oir da madh iat na fertana, mar adubradar san, cuis tuili srota Nil, da linfaide gan aimsir airithe cum a linta gac uair dferfad ann co hacmainnech trit an mbliadain amach, mar lintar na srota eli. Et as follus da gac aen daci e nac lintar an srot sin acht a naimsir airithi sa bliadhain .i. a mi Adhuist; ach an trat feras co himarcac a crich egin laim ris an Eghift, gabaidh an srot sin becan linta on fertain sin, oir an fertain feras a cricaib ciana on Eghift ni medaiginn si srot Nil caiti ar son rofad tobair an thsrota on Egift ⁊ ar rotirma na talman ⁊ is ime sin, gibe trat dearrach no da thsamradh no daimsir eli feras ann, suidhid an ferann gainmec rotirim ⁊ britin na greine uisci na fertana ⁊ ni liginn e dinnsaidi an tsrota. No an trat lintar tri imarcaidh fertana, maille le fuarlochaib mora, an srot, ata da teas an talman a timcill an tsrota, nach tusca lintar na fuarlaidhi na suighes an talam iad. Ni minic bis an tuisci aicideach sa tsrot sin ⁊ bidh caithi linta port re port da uisci fein.

Da derbad sin, da ndernta claidhi a mbedh da ced no tri ced mili ar fad an talman tirim ge madh mor duisci da doirtfea a ceann de da tsuidfedh an talam uili e sul da roised en deoir an ceann eli de; ⁊ is mar sin tshuiges talamh brithnech te srota Nil na huiscada feras na timcill sul shoitid an Eghift, ma sedh ni hi an fertain cuis tuili srota Nil.

Ni ele da derbad an raeda cedna mar dacualasa om arsantaib fein .i. da sailedar Egiftidh uair egin nach linfad srot Nil no co curtaighi an maighdin budh ailli ⁊ bud ferr deissi isin Eighift ann, ⁊ is uime sin da ba egin doib fuarlaidhi an tsrota dfaghail da fliuchad an ferainn, oir as e sin bis acu a ninadh na fertana; ⁊ da curdis an maidhin as ailli dageibthi ansa cric uili a tosac mi Auust annsa srot, ⁊ da linad an srot an uair da eissi sin ⁊ ni har son na mna do cur annsin acht ar son a aimsiri fein da techt. Agus da linadh an Eghift na timcill fein uile ⁊ da bi an monadh so a ngnathochann isin Eigift no co tainic aimser Thomarus .i. ri na hEigifti. Et mar daconnaic an ec isin angnathadh borbpecac sin a tosach mis Adhuist, do rinne litir bec ⁊ adubairt innti A nainm an tigerna trocairidh Thomarus righ na hEighifti, betha ⁊ slainti da srot Nil, ⁊ madh ail let, a srot Nil, tri cumachtaib De tuisci da dortad ar ferann na hEigifti, guidmid thu ma denum anois ⁊ munab ail let, ni fuil brig acainn innut. Agus da chuir an litir annsa srot annsin, ⁊ ni trit an litir, na trit an mnai, ac mar tainic a aimser fein da cuir dar a bordaib co hacmuinnech ⁊ do lin an Egift. Et as uime sin, da mad o na fertanaib sin da ticfedh an tuili sin, as a minic sa bliadain feras ann, as minic do linfad an srot. Ma sed os a breg an baramail so, oisceolsa cuis firinnech tuili srota Nil.

Agus aderim gorab idir oirrcer an domain ⁊ an ard teas ata bun an tsrota ⁊ idir iartar an domain ⁊ an aird tuaig teit se a fairgi ⁊ is amlaid ata aer na hEgifti te, tirim ⁊ ni licinn gaeth na neil na fertain inti co brac ac co hannam. Oir, ge tait na crica eli ac seidid na timcill, dluthaid ⁊ daingnidh an taer sin, innas corab maille re hanfad romhor teit neil no fertain tar coicrich an aeir sin astec. Agus an uair ainminic theit, bid toirrnec adhuathmar ann ⁊ gaeth romor ⁊ teinntec mhor noch marbas eallach na hEgifti. Et as i naduir an aeir coitcinn, an trat teidhes, dul a scailedh ⁊ a letni; ⁊ an tan fuaras, timsaighi dinnsaigi a celi, ⁊ dluthaid ⁊ tairrngidh gach ni is cosmail ris da innsaighi. Aer na mara, as fuare e san aithi na sa lo ⁊ is ime sin an trat ardaighes an grian co hinadh medon lae, tri teas na greine, scailid an taer ⁊ lethnaidh ⁊ seididh an gaet aniar on uair sin co taca medon aichi a ndoirsib na srotann tsilis is in fairrgi siar, ⁊ buailidh a nagaid na srotana ⁊ teilgid iat da nainneoin tar a nais ⁊ ni liginn doib siled sa fairgi no co mboininn fuacht na haithi a brig as teas na greini; ⁊ is mar sin as o teas an aeir tic gibhail risna srotaib ⁊ is o fuacht an aeir tic an siledh. Et mar is teo aer na

mara sa lo na san aithi ⁊ gorab o neasacht na greine duinn ⁊ o na fad uainn tig an claechlod sin ar an aer, ma sedh an aimser ana ro foicsi duinn sa bliadain hi .i. an samradh, as ann as roteo an taer sin na fairgi. Et as ime sin on ced la da mhi Mai conuic an taca a tet an grian a neccinocsium Septimpir, seididh gaet na fairgi soir dinnsaighi na hEgifti as cinn srota Nil ⁊ cuiridh re haer na hEgifti da gluasacht ⁊ da chur as a inadh fein.

Et o ta an taer sin tirim, trom, dogluasta gabaidh risin ngaith ⁊ ni fagann a inadh fein, ⁊ an gaet bis oc sir seididh, o nac fadann slidhi eli, cuiridh srot Nil da aineoin tar a ais ⁊ ni leiginn en deor de sa fairgi, ⁊ scubaid an gaeth cedna moran da gaineamh na fairgi a ndorus srota Nil da ainneoin. Et as uime sin, o nac leigter sibal dan tsrot sa fairgi, linaidh se ar fud na hEighifti suas ⁊ bid an tuili sin ar bun an comfad bis a brig fein sa gaith .i. feadh na haimsire adubramar o cianaibh, on ced la da mhi Mai co heccinocium Septimpir ⁊ as annsin tinnscnus a brig dul as an ngaith ⁊ facus an grian a mullach na fairgi ⁊ islides si deis a celi san aird teas don doman. Et o nac fedann uisci an tsrota gabail ris an gaith mar fuair conuice sin, brisidh se an sliab gainimh ⁊ teit roimhe sa fairrgi ⁊ fagaidh in Egift ⁊ is annsin donit na hEgiftidh treabad ⁊ cur, o bis a deimhin acu nac toirmeoscadh an srot iat co di an aimser cedna aris. Et mar sin is follus co toirmeoscaithi iat co minic ni bud tusca nan aimsir sin da madh o na fertanaib da ticfad tuili srota Nil.

Et tecmaid an linadh cedna da srotaib na cric eli siles is in fairgi siar gin co tecmann co mor re srot Nil, oir ni fuil acht aer lag sogluasta, nac gabann risin ngaith ⁊ gluaises le gac slighe da mberinn e is na cricaib ele. Et as ime sin nac bi lethad tuili srota Nil a nen tsroth eli is na cricaibh ⁊ co raib in ti da crutaid srot Nil bennaithi tre bithu sir in secla cecloram.

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13. DICO SICUT SUPERIUS UERACITER, ETCETERA.

Aderim co firinneach mar adubart ar dus gurub iat as cirp edroma ann, na cuirp gluaises o medon co nuic an cercaill timcill ⁊ gurub iat as cirp troma ann, na cirp gluaisis as sin co medon ⁊ gurub ac na ceithre duilib ⁊ ac gac ni cumusctar astu atait an da gluasacht direca sin. Ma sedh o nac gluaisinn an firmamint o medon no cu medon, tuicter nach trom ⁊ nac edrom hi, oir da mad trom hi da gluaisfedh co medon ⁊ da madh etrom da gluaisfedh o medhon ⁊ o nac neachtar acu sin tuicter hi, tuicter na deagaid sin nac te hi ⁊ nac fuar, oir as annsna corpaib te mar ata an tene bis an edromacht ⁊ o nac fuil sisi edrom mar da derbamar, as egin nac fuil teas innti, ⁊ os is na corpaib troma, mar ata an talam, bis an fuardhacht, a nach fuil an firmamint trom is egin nach fuil fuacht innti. Tuicter aris as sin nac fuil an firmamint fliuch na tirim, oir oibridh an flichi amluas annsa corp a mbi, mar dani san aer gluaises o medon ⁊ annsan uisci gluaises co medon. Agus mar sin oibriges tirmigacht luas is na corpaibh a mbi, mar oibriges isin tene gluaises a medon ⁊ isin talmain gluaises co medon. Et o nac fuil luas na amluas isin firmamint, ni bi uair is luathi ina ceili na uair is amluaithi na celi on trat da crutaigh Dia e acht en gluasacht inann cobsaidh siraidhi da bi ⁊ ata bias aigi co deredh an domain. Et as ime sin nac fuil fliche na tirme as a ticfadh luas na mailli ann. Et mar sin e an gluasacht cedna ata ac speir na nairdrinnach ⁊ ac secht speirib na secht plained da bhi ⁊ bias co deiredh an domain.

Et atait blodh do na haineolcaib ata co hainfeasac a gnimartaib De, ga rad gurab is na ceithre duilib da cumuscadh an firmamint, ⁊ ata co follus a nagaid na firinni, oir ni fuilnginn resun, o ta an naduir examail ag an cetharduil an gac ulli ni on naduir na firmaminti, co cumusceotaid an firmamint astu san. Oir is i naduir na cethardula, mar adubrumar, blod acu da gluasacht co medon ⁊ blod ele o medon amach ⁊ an gluasacht sin da beth co haimserda ⁊ a beth nis luaite na deredh na na tosach ⁊ comnaidhi sir da beit acu na ninadh fein ⁊ gan na hidaidh sin dfhagail caithi acht da nainneoin, oir is comhaisi gac duil don cetharduil re cele ⁊ a comnaighi nadurtha.

Agus leis sin atait caili iomdha isin cetharduil .i. tes ⁊ fuacht, fliche ⁊ tirime, etruma ⁊ troma, luas ⁊ mailli, ⁊ is amlaid ata naduir na firmaminti a cert agaid na naduir sin, oir a nagaid gluasachta dirid na cethardula ata gluasacht timcill na firmaminnti ⁊ a nagaid aimserachta an gluasachta sin ata siraigecht a ngluasacht na firmaminti ⁊ i nagaid luais ⁊ maille an gluasachta sin ata siraidacht maille a ngluasacht na firmaminti. Et a nagaid comnaidi sir na cethardula na ninadaib fein ata sibal sirnadurtha na hinadh fein ac an firmamint. Et mar as comaisi an cetharduil ⁊ a comnaidhi re celi as mar sin as comaisi an firmamint ⁊ a gluasacht re celi ⁊ ata a negmuis gach uili cail da cailib na cethardula; oir ni fuil teas na fuacht, na fliche na tirme innte na etromacht na troma na luas na mailli.

Et mar daniter ranna na cethardula ni truaillidter ⁊ ni claechligter hi co brac ach mar da bi o tus an domhuin co daingin duinti dotruaillidthe doscailti, ⁊ is mar sin bias co nic an cric dordaidh an tusmiteoir di. Ma sedh o ta naduir na cethardula ⁊ naduir na firmaminti co direch a nagaid a celi, as a nagaid resuin ⁊ naduir aderar gorab is in cetharduil da comasced an firmamint.

Resun eli a nagaid na baramla cedna .i. gach uile ni cumuscter a netib contrardha bis ac oibriugad a nagaid a ceili ⁊ bis a truailled a ceili truailligter uili fa deredh e, mar atait na daine ⁊ na hainminnti ⁊ gach uili ni ele cumuscter sa cetharduil a mbid caili contrardha na ndul a scris a ceili ⁊ an trat gabhas cail acu tigernas ar in cail ele truaillidter co huili an raed cumuscter asta. Mar sin da cumusctaidh an firmamint is na ceithre duilib o na cailib contrara sin da beit ac truailled a celi da scailfithe ⁊ da truaillfithi an firmamint fo dereadh.

Ma sedh o nach faicter ⁊ o nac facas ⁊ o nac ficfiter comarta an scailti uair, tuicter corab cian uaithi beth ar na cumosc isin cetharduil. Ma sedh in te dordaigh mar sin i co roib bennaithi o gac aen dacithfi [edh hi.]

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14. QUANDO DEUS FIRMAMENTUM CREAUIT, ETCETERA.

.i. An trat da tuismidh Dia an firmamint da ordaid se gluasacht coimlinta foirfi nac fasann ⁊ nac teit ar cul caithe, oir as re ceithre huairib *fichet*[1] coimhlinas an firmamint a timcill co neamhfailleach nemmheallta ⁊ is iat na ceithre huaire fichet sin as aitchi ⁊ is la ann.

[1] Missing from ms Stowe B.

Da rinne fos Dia speir na greine dfoillsiugad lae ⁊ aitchi ⁊ a cailidechta ⁊ a fad ⁊ a ngirri ⁊ dfoillsiugad mesardachta neamdha ⁊ examlachta fasta ⁊ traighti teasa ⁊ fuachta a ninadaid examla cum na creatuir da silad o ceili ⁊ cum ordaithi an domain da coimlinadh; oir da ngluaisidh an firmamint ⁊ an grian ni bud luaithi na mar danit, da gerrfaidi na laeithe ⁊ na haiteda ⁊ ni beit aimser coimlinta a gnimhartad ac an grein ⁊ da locfadais na creatuir talamanda fas; ⁊ da ngluaisdis nis maille na mar danit da faideochaidh la ⁊ aithi ⁊ mar sin da beth grian co rofad os cinn na talman ⁊ da bruitfedh ⁊ da tirmochad agaid na talman ⁊ ni leigfeadh en red dfas tri talmain. Et mar sin ni fedfaidis daine aitreabocan da denamh isin aird bu dheas don doman mar donit anois leted se ceiminna deg don taib astigh don line medonac an domain, oir daghenadh rocomnaidhi na greini an tinad sin co doaitrebta. Agus mar sin timcill deiridh se ceiminna ⁊ tri fichit ceim na firmaminti on line cedna bud thuaidh, da beth an tinadh futa co doaitrebtha tri fuacht na haithi rofaidi. Et ata an tinadh o deredh na se ceiminna ⁊ tri fichit sin doaitrebtha tre fuardhacht anmesardha conuic an inadh ata co direach fa cuairt na greine. Oir an trat claenas an grian dan taib u deas don doman, fasaid an fuardhacht an medi sin isin taeb budhtuaidh innus nach fedaid ainminnti aitrebachan ann ⁊ nach fasait a crainn. Et mar sin don taib amuith don line adubrumar u dheas ni aitrebhaid daine na ainminnti ann tre imarcridh teasa, ⁊ is in crit as foicsi don line sin don taib astidh atait na fir gorma noc dubus o teas ainmesarda na greine.

Adobrumar thuas nac fuil en cail do na cailib contrara o tic gac truailled ⁊ gac scailed isin firmamint, ⁊ mar sin ni fuil contraracht na gluasacht acu oir is egin da gluasacht cac uili cuirp isin doman beth cruinn no direc no cumusca asta ar aen amail ata gluasacht na cartach. An gluasacht cruinn ⁊ direc co nemhcumusca atait siat. As ime sin, gac corp cumasca ⁊ nemcumasca as cruinn no direach gluaises se. Acht is e is gluasacht cruinn ann an gluasacht teit mar samail cercaill a dimcill medoin. Acht is e is gluasacht direach ann an gluasacht teit o medon tuas co medon tis ⁊ atait na tri gluasachta na ngluasachtaib nemcomusca ⁊ is nemcomusca an gluasacht cruinn nan da gluasacht eli oir is neamcumusca an corp gluaisis mar sin na gach uili corp.

Et an da gluasacht sin teit co medon ⁊ o medon as cumusca iat ac fecain an gluasachta timcill cumascter sa cetharduil, oir ni fuil gluasacht cumusca ann co firinneach ach an gluasacht sin ⁊ ge ta crac en corp do na ceithre corpaibh duilita cumusca as da cail, nemcumusca iat ac fecain na corp cumuscter asta. Et as amlaid ata an gluasacht timcill, ar son a beth nadurtha dho na gluasacht fhoirfi, gan tosac gan deridh aigi, gan a sibal da beith cum comhnaighi na cum impoidh tar ais; ⁊ ni mar sin dan gluasacht direc noch gluaises duairib ann co hainneonac na cirp, oir in trat bis duil egin dan taibh amuith da hinadh nadurtha fein gluaisidh co hobann tar a hais dinnsaidhi a hinaidh fein aris ⁊ anaidh co nadurtha annsin ⁊ is ime sin bis tosac ⁊ deiridh ag an gluasacht sin. Agus is red nemfoirfi in raed ag a mbi tosac ⁊ deridh ⁊ is mar sin as gluasacht neamhfoirfi an gluasacht direc. Et mar as tusca ⁊ as mo ⁊ is buaine ⁊ is uaisli gach ni foirfi na gac ni nemhfoirfi ⁊ is mar sin teit an gluasacht timcill isna ceiminnaib cedna tar in ngluasacht ndirec.

Tuilledh da derbadh an raeda cedna. Aderaid na feallsamain an gluasacht bhis co hainneonac do ni, bid se co nadurtha dan ni eli, mar ata dul suas na teinedh ⁊ na talman no dul sis na deise cedna. Et mar as aicideach gac ni aindeonac ⁊ mar as sustaint gac ni deonac nadurtha ⁊ mar as contrardha in taicid ⁊ in tsustaint da celi, is mar sin is contrardha an gluasacht ainneonac ⁊ in gluasacht nadurtha da ceili. Et ni hed amhain ach in ni ata tis ⁊ tuas, deas ⁊ cle, roimhe 7 na dedaidh, atait contrardha

da ceili. Et mar as uaisli gach ni ac na bi contrardacht na an i ag a mbi as mar sin as uaisli an gluasacht timcill ac nac fuil contrardacht na gac gluasacht eli da ndobart.

Tuilledh eli da derhadh an neic cedna; gach uili ni gluaises co nadurtha da gluasacht direc, fedtar a gluasacht co hainneonac ⁊ a nagaid naduir ⁊ ni mar sin don gluasacht timcill, oir an cursa cruinn timcill da hordaidedh dho a tus an domuin da bi ⁊ ata ⁊ bias co nemmellta, gan cor da taib da na taebaib, ga congmail sin tri bithu sir. Ma sedh is follus gorab tusca buaine an gluasacht timcill nan gluasacht eli.

Et ce ta an gluasacht air leth a gac rotha do rothaib na firmaminti, is le celi gluaisid uili gan contraracht, oir da mbeth contraracht is in firmamint mar ata is na corpaib duilita, gac ni oibriges si innta sin daghenadh a macasamhla isin firmamint ⁊ mar sin an corp u treisi sin firmamint, da claechlochad se a na naduir fein an corp budh anmaine ⁊ mar sin dacitfimis na plaineid ⁊ na hairdrinnaidh ⁊ na retlanna eli uair budh mho ⁊ budh ludha iat na ceili. Ni faicter so anois ⁊ ni facas ⁊ ni faicfer caithi. Ma sedh is follus a ni as a tuicfidi na claechligti sin .i. an contraracht is in firmamint.

Et as amlaid ata an corp mor seimh daingin is in firmamint na cercaill cruinn mar samail liatroidi a timcill a seantruim fein ⁊ a ponc a puinc medonaidh ag anmain a nen inadh co brac ⁊ a cumscugad da sir ⁊ is derb gorab comtrom an gluasacht sin o nac derna en comnide da laided riamh ⁊ nac gluaisinn uair is luaithi nas maille na celi. Agus is mar sin atait secht cercaill na secht plained .i. Luna, Mercuir, Venir, Sol, Mars, Ioip, Saturnus ⁊ cercall na nairdrinnach ndogluasti ⁊ cercall an da comarta deg mar ata cercall re ndubrumar an firmamint. Et as mar sin da badar na deich cercaill so on uair da crutaig Dia iat ⁊ is amlaid beit co brac an comfad as ail leisin a mbeth amlaid.

Et aderaid na haineolaidh co fuilit primcaili na ndul ⁊ caili na nethidh cumasca astu isin da comartha deg ⁊ is na plainedaib ⁊ aderaid co fuil Airges, ⁊ Leo ⁊ Saigitairius te tirim da rer naduir na teinead ⁊ Taurus, Uirgo, Capricornus fuar tirim do rer naduir na talman; Gemin, Libra, Acarius te, fliuch do rer naduir an aeir; Cannsir, Scoirpio, Pisis fuar fliuch da rer naduir an uisci. Et aderaid co fuil cuit do na comartaib sin sogluaisti ⁊ cuid daingin dogluaisti ⁊ cuid nemneachtardha. Et aderaid co fuil cuid aca feramail ⁊ cuid mnaamail ⁊ cuid solus ⁊ cuit dorcha. Agus adeiraid co fuil cuit maith do na plainedaib ⁊ cuit olc ⁊ go fuil blodh dib co soirb imcubaid da dainib maithi ⁊ blodh co doirb cle donaidhi da drochdainib. Et aderaid aris muna bedh an grian na sustaint fein te ni dingnad si na gnimarta teasbaid dacimid is na neicibh talmanda, oir is cert inann gnimhartha dani isna neithibh talmanda ⁊ dani an tene, noc ata te na sustaint fein .i. losgadh ⁊ tirmud ⁊ dubadh.

Et aderaid aris muna beth an re fliuch ann fein nac oibreocad filche is na neicib talmanda. Et adermidni na agaid sin gorab secranach ealadhan an baramail sin ⁊ gorab breg hi ⁊ aderim nac fuilit comartada na firmaminti fluich na te na fuar na tirim na maith na saith, gidhedh as as a ceangal fein re celi ⁊ as a sibal oibrigid siat na caili sin gin co fuilid innta fein isna netib talmanda, oir is a hen tsustaint ⁊ a hen adhbhur da rinneadh iat uili ⁊ foillseochamaid so nis grinne na mar so na deadhaidh so.

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15. SCIENDUM EST, ETCETERA.

i. As follus nach as a blasannaib na as a mblathaib athainter naduiri na corp nadurtha, oir da madh as a ndathannaib da hathontaidh iat da bedh en naduir ag na corpaibh geala uile ⁊ gach uili ni da madh inann dath no blas as den naduir da beidis, oir dachiamaid gorab en dath ata ag an tsnechta ⁊ ac puisdian ⁊ ac an caisi ur gidedh as naduir ar leith ata a gac ni dibh. Et dacimit aris, ge tic apium ⁊ alues le cele da rer a serui, ni hinann naduir doib oir ata ni acu te ⁊ ni ele fuar ⁊ is mar sin adermid don bolad. Ma sedh ni as a ndathannaib na as a mblasanaibh na as a mbolladaib na as a nglaccad atainter naduir na corp nadurtha ach as a ninadaib ⁊ as a ngluasachtaib. Et aderaid na haineolaidh go claechligter an firmamint na rannaib no innti fein uili re haimsir fada, gin co fuil an claechlod sin co follus duinne mar dacimid an tor ⁊ an tiarann ⁊ an corp ⁊ iacingctis ⁊ moran do clocaib uaisli ele, da dergadh re narsud ⁊ re faidi a naimsiri, a meid ⁊ a ndatanna ⁊ a mblas ⁊ a mbalad da claechlod doib le fad a naimsiri gin co follus duinni an claechlod sin ca denamh tri rofad na haimsiri ana ndentar e.

Adeirmidne riusan ac fregra doib co ngabann cac uili ni ata fan escu a speir na ceithre dula claechlod cuige; ⁊ atait da gne ac an claechlod sin .i. claechlod uili ⁊ claechlod rann ⁊ is a timcill fasta ⁊ truailligti atait an da claechlodh sin ⁊ is folluse an claechlod uili nan claechlod rann. Et gach uili corp claechligter ann is na cainndigecht no na cailidecht bis an claechlodh sin ⁊ as iat gnimharta an cuirp foillsiges an claechlod sin duinne; oir an tan daniter slan don corp easlan ⁊ easlan don corp slan as iat gnimartha an cuirp sin follsiges an claechlod sin duinne. Et mar sin an trat doni edrom don corp trom, as iat gnimartha an cuirp cedna foillsiges an claechlod sin duine. Et mar sin an trat doniter luath don corp amhluath no amluath don corp luath, as e luas no amluas an cuirp sin foillsiges an gluasacht sin duinne.

As mar sin, da medaithi no da laigdithi an firmamint, dfoillseochadh a gnimharta an claechlod sin duinn. Oir in trat do medocaidh ⁊ da fairsingeochtai hi ⁊ do cuirfithi na hairdrinnaidh ni budh faidi uainn na mar atait siat, as lugha an cainndigecht dacithfimis acu sin annsin na mar dacimit anois. Agus ata moran acu dacimid anois nach foicfimis fon taca sin, ⁊ mar sin an trat da cumhgochaidhi a timceall na talman, da badh aibsidhi linn cainndigecht na nairdrinnach fon taca sin na anois ⁊ dacithfimis annsin moran da retlannaib nach facamar roimhe. Ma sedh o nach facaid neach riamh na claechligthe sin insin firmamint, oir da faicedh dagebtai scribtha e, as dearb ⁊ as deimin nach medaigter ⁊ nac laidhditer ⁊ nach cumgaigter ⁊ nac fairsingigter an firmamint.

As mar sin da claenadh an firmamint da leth deis no da leth cle no roime no na diaid no da necadh sis no suas as in inad ana fuil da badh egin co natrocadh an seantrom le .i, an talam, gidedh ni fedann an talam a inadh fein dfacbail oir ni fuil aici inadh a racadh, oir gach inadh an a timceall, ata lan do corpaib eli ⁊ o nac fedann da corp beit ar aen tslidhi a nen inadh, ni fedann an talam a hinad fein dfagail da dul fare corp eli ⁊ is mar sin is egin don firmamint beith na sir comhnaidhe co dogluaisti doclaechlighti a timcill na talman tri bithu sir. Et da nabartaidh gorab o anmainne no o dombisec a cuirp da tigemad claechlod na firmaminti, mar anmainnigter corp an duine on eslaini, as mar sin da hanmainneoctaig gluasacht na firmaminti mar daniter sibal an duine eslain ⁊ is mar sin da claechlodfaidis na huaire ⁊ na haimsera, ni nach tarrla ann raimh, oir is en cursa da bi acu riamh ⁊ aniudh ⁊ bias co brach. Ma sedh o nac

claechligter sustaint na cainndighecht na cailidheacht na inadh na gluasacht na aimser na firmaminti, na eirghi na dul fai na folach na foillsiugad airdrinnac ⁊ nac dernadh riam ⁊ nac dinnginter co brach, is egin gurub en modh daingin doscailti da bhi aice ⁊ ata ⁊ bias an comfad bus ail les in te da crutaigh hi ⁊ gorab naduir ele ata aici a naduir na ceithre dula.

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16. QUI PERFECTE CIRCULOS LINEASQUE, ETCETERA.

Gibe neach da ticfad co foirfi cercalla ⁊ linedha ⁊ puinc na firmaminti da thicfad gan cunntabart naduir na firmaminti co huili, ⁊ is amlaid is coir a ticsin, a himaidh ⁊ cruth mar ata si innte fein da smuaintiugad ⁊ da cuma ad resun ⁊ at intinn co grinn dan taib astigh. Et as amlaid ata suigiugad ced cercaille na firmaminti, on ponc, oircercach conuic an ponc medonac uachtarach as cinn talman ⁊ as sin co roith an ponc iartharach ⁊ as sin co nuic an ponc medonac ichtarach fo talamh ⁊ as sin aris conuic an ponc oircearrach or tinnscain si ar tus ⁊ as e ainm na cercailli sin .i. *orientalis* ⁊ *occidentalis* .i. an cercaill oirrcerac no an cercall iartarach ⁊ ainm eli daberar uirre .i. cercall an line diridh, oir in trat teit an grian sa line ndirec sin, bith la ⁊ aithi comtrom a cricaibh an domain uili. Agus is ann suigiter an dara cereall, o ponc poil Airtic co ponc uachtairaid na firmaminti ⁊ as sin co ponc poil Antartic ⁊ as sin co ponc medon ichtair na firmaminti fa thalmain ⁊ as sin co ponc poil Artic as ar tinnscainn roimhe. Et ataid tri hanmanna ele daberid na feallsamain ar in cercall so .i. *Septrintrionali*, *Australis*[1] ⁊ *Meridionalis* .i. an cercall tuaiscertac non cercall deiscertac no cereall an medon lae. Et as e suidiugadh an tres cercaill, o ponc oirrcerach na firmaminti co ponc poil Antairtic ⁊ as sin co ponc iartair na firmaminti ⁊ as sin co ponc poil Artic ⁊ as sin co ponc oirrcir na firmaminti. Et is e as ainm don cercall so, *circalus termenorum* no *circalus signorum* .i. cereall na termine no cereall na comartadh.

Et is e so suigiugad an ced line da tri linadhaib na firmaminti o ponc oircerach na firmaminte tri ponc medhonach na talman co ponc iartarach na firmaminti. An dara line o ponc mhedon uachtair na firmaminti as cinn na talman tri ponc mhedonac na talman co ponc medon ichtair na firmaminti fo talmain. An treas line o pol Airtic tri ponc medonac na talman co ponc poil Intartic.

As[2] is iat so secht puinc na firmaminti, a se dib isna se hinadhaibh a tiagait na tri cercalla adubrumar tar a ceili ⁊ a na fuilit se cinn na tri linadh adubrumar. Et an seachtmad ponc .i. seantrom na talman noch ata na sentrom ag an doman uili.

As[3] is e inadh a na fuil an ced ponc dib sin, a noirrcer na firmaminti isin inadh a teit *circalus terminorum* ⁊ *circalus orientalis* no *occidentalis* tar a ceili. An dara ponc a medon uachtair na firmaminti as cinn talman insan inad a tet *circalus orientalis* no *occidentalis* ⁊ *circalus Septrimtrionalis* no *Australis* tar a ceili. An treas ponc a niartar

[1] A printing error in the ITS edition has been rectified.
[2] 'Et' in the ITS edition. C.f., comment to the following footnote.
[3] Stowe B frequently uses a shorthand symbol ℭ roughly equating with our keyboard symbol for the conjunction '&'. Power restores it to the Latin 'Et'. It could be equally taken to equate with the Irish 'as'. I have followed O'Farrelly in this regard. Furthermore, in this case, a print error has resulted in 'Ee' in the ITS edition.

na firmaminti isin inadh a teit *circalus orientalis* no *occidentalis* ⁊ *circalus terminorum* tar a ceili. An ceathramad ponc a medon ichtar na firmaminti fai talmain as in inadh a teit *circalus Septremtrionalis* no *Australis* no *circulus orientalis* no *occidentalis* tar a ceili. An cuigmed ponc a tuaiscert na firmaminti is in inadh a teit *circalus septremtrionalis* no *Australis* ⁊ *circalus terminorum* tar a celi. An seiseadh ponc, a ndeiscert na firmaminti isin inadh a teit *circalus terminorum* ⁊ *circalus septremtrionalis* no *Australis* tar a celi. An sechtmad ponc mar adubrumar seantrom na talman noch ata na seantrom ag an doman uili a na tiagait na tri linadha adubrumar trit a ceili ⁊ is e sin suighiugad ⁊ tuarascbail na tri cereall ⁊ na tri linadh ⁊ na secht ponc, noc adubrumar tuas. Gibe neach da ticfad iat co forfi co tuicfead se naduir na firmaminti uili.

* * *

Dexamlacht ergi ⁊ dul fai na greine a moran da cricaib.

17. SOL PRIUS BABYLONI QUAM EGYPTO, ETCETERA.

As tusca eirghes an grian don Uaibileoin na don Eghift ⁊ don Egift na don vFrainc. Et mar sin as tusca teit si fai don Babileoin na don Eigift ⁊ is tusca don Eighift na don vFrainc. Et da cur so a ceill co follus, cuirfad na tri cricha so mar eisimplair ar eirgi ⁊ dul fai na greine da cricaib ele an domain a fidair iomitrice, acht as ed is ail lium beth sbas se nuaire daimsir idir an mBaibileoin ⁊ in Eigift ⁊ atorra sin aris ⁊ in Frainc ⁊ mar sin idir na cricaib eli ⁊ da gen da eisi sin cercall cruinn a nimdenam na talman ⁊ cercall as mo na sin dan taib amuith de amail cercall na greine ⁊ cuirfed a ninadh na Bauileoine A litir ⁊ a ninadh na hEighifti B ⁊ a ninad na hAfraici C ⁊ scribocad a neirghi greine na Baibileoine D ⁊ na medon lae E ⁊ a ndul fai na greine F ⁊ mar sin a neirghi greini na hEigifti B ⁊ na medon lae F ⁊ a ndul fai na greine G ⁊ mar sin aris a neirghe greine na hAfraice F ⁊ na medon lae G ⁊ a ndul fai na greine D.

Et mar sin aderim an trat eirghes grian a ponc D foillsigter da lucht na Baibileoine i ⁊ folaiter ar luct na hEigifti no co tic si co ponc E noc ata na medon lae sa Baibileoin ⁊ na eirgi greine ac an Eighift ⁊ na medon aithi ac an Afric, oir as annsin eirges an grian do na hEgiftecaib ⁊ gidedh ni follus da lucht na hAfrici i no co soitinn si ponc F noc ata na deredh lae annsa Baibileoin ⁊ na medon lae ag an Eigift ⁊ na eirgi greine ac an Afric, oir is annsin tinnscnus la do hAfriceacaib ⁊ na deredh lae ac na hEigifticaibh ⁊ na medon aithi ac an Baibileoncaib. Dacit na hAfricid hi no co soitinn si ponc D noc ata na deredh lae acu ⁊ na medon aiti ag an Eighift ⁊ na tosac lae ac an Baibileoin, ⁊ is mar sin is a nen ponc ata tosac lae na Baibileoine ⁊ medon aithi na hEighifti ⁊ dered lae na hAfrice. Et a nen ponc eli ata tosac lae na hEighifti ⁊ medon lae na Baibileoine ⁊ medon aiti na hAfrici. Et mar sin as a nen ponc ata tosach lae na hAfraici ⁊ medon lae na hEigifti ⁊ deredh lae na Baibileoine. Et mar sin aris as a nen ponc ata medon lae na hAfraici ⁊ deredh lae na Eighifti ⁊ medon aithi na Baibileoine.

Et mar sin da rer ordaithe De, an trat eirgis grian da cric egin isin doman, teit fa da cric eli ⁊ is e cruinne na talman doni an examlacht sin da dhul fai ⁊ deirghi na greine annsa doman.

Et as i so this an fidair da geallamar thuas da denamh.

Do med na greini.

18. RATIONES GEOMETRICAE, ETCETERA.

.i. Derbaid resuin iomitrict Tolimeus *astrolaic*[1] med na greine. Et adeir gorab egin cainndigacht na greine da beth comtrom no nis luda no nis mo re cainndigacht na talman; ⁊ da madh comtrom da beit grian ⁊ talam, da rachadh scail na talman .i. an aitchi, coimhletan risin talmain fein amac co speir na nairdrinnach ndaingin ⁊ da mucfad si iat. Et da tigemad eclipsis .i. easbaidh soluis don re, gac en mi trit an mbliadain amach, oir da boinfedh cainndigecht na talman noc de beth co mor re cainndigecht cuirp na greine solus na greine don re ⁊ do na hairdrinnacaib ⁊ mar sin ni beit gealach co brac ann ac dorcadus siraidhi o tosach na haiti conuic a deredh. Ma sedh o bis an gealac ann ⁊ daciter na hairdrinnaich co solus is in aithi, tuicter as so nac comtrom an grian ⁊ in talam re ceili.

Agus da chur a cell co follus daghen fidhair tri cercaill a timcill a celi .i. an cereall leitimillech amail cerceall na nairdrinnac ndaingin, ⁊ an cercall modonac mar cercall na greine, ⁊ an cercall as lugha mar cercall an re ⁊ an talam ar a lar ⁊ in grian fon talmain this na speir fein, coimlethan ris an talmain ⁊ scaile na talmain ar comair na greine don taeb eli don talman, coimlethan ris an talmain, ac dul amach co speir na nairdrinnach co direach.

* * *

19. SI AUTEM SOL MINORIS ESSET QUANTITATIS, ETCETERA.

.i. Da madh lugha cainndigecht na greine na na talman, gac uili ni do ceadaithe dofulaingi adubrumar ⁊ tuilled leo, da tegemaddais ann, oir da bet scaile na talman ac sir fas ar meid ⁊ ar lethead on talmain amach co speir na nairdrinnach ⁊ da dhorcochadh se an cuid budh mho acu ⁊ da tegemad eclipsis do na plainedaibh is gac en mi ⁊ da bedh eclipsis an re, mar adubrumar, ar bun re fedh na haithi co maidin. Ma sedh o nac facamar an í so riamh ⁊ o nac cualamar ⁊ o nac fuaramar scriobtha as egin nac lugha cainndigecht na greine na caindigecht na talman. Et foillsigidh an fidair so tis an radh so adermaid.

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20. NECESSARIO IGITUR FATENDUM EST.

Is egin a admhail gorah mo caindigecht na greine na na talman ⁊ nach ted sgali na talman tar speir Mercuir suas chaithi ⁊ is ar cuma speiri ata sgaili na talman .i. an chuid lethan risin talmain ⁊ se ag dul a ngiri tar es a chele no go taire becan don taibh thuas do speir an re. Et is e in sgaili cedna dorcaidhes an re do rer mar beris se air, oir an trath bis an re a ndesgeart no a tuaisgeart an sgaili, an chuid ar a mbi se don re dorcaigid se e ⁊ an trath beris se ar a leth dorchaigid se uile e. Et gidhed ata a fis againne ⁊ fuaramar sgribtha nac soitheann an sgaili sin na talman na hairdrennaidh na en plained do na plainedaibh ach an re amhain, noc ata na comursain ag an talmain ⁊ is ime sin bid na plaineid uili a negmuis an re ⁊ na hairdrennaidh tri bithu sir solus on

[1] This description of Ptolemy as an astrologer is not found in either the Marsh ms or the second RIA copy.

grein ⁊ is as sin derbas gorab mo an grian na an talam da mhoran mar foillsighes an fidair so this.

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21. LUNA NIHIL LUMINIS HABET NISI, ETCETERA.

Ni fuil en red solus isin re acht mar ghabus on grein ⁊ as amlaid ataid ar aen comtrom mar samail liathroidi cruindi, oir da madh na claraibh lethna do bedis, amail adobradar na haineolaigh, an trath do bedis a noirrcer no a niarrtar na firmaminti ni faicfithi dibh acht a mbuird ⁊ gidhedh docithfithi iad uili a mullach na firmaminti. Ma sed o nach folluse dociter cruinn iat a mullach na firmaminti na an gach inadh eli acu sin tuicter gorab cruinn ataid fein ⁊ nach lethan. Et an cuid cruind ut dacimid a gac aen dib ni fuil ann acht emisperium .i. letspeir ⁊ an let eli gan fhaicsin. As mar sin is follus gorab corp cruinn ata ag an grein ⁊ ac an esca ⁊ ac na plainedaibh ⁊ ac na hairdrinnachaibh uile, oir gebe taeb da faicter iat as cruinn daciter iat.

Et mar adubramar, ni fuil solus on a naduir fein ag an re ⁊ as amlaid ata dorcha slighaithe amail iarann iar na glanadh, ⁊ in med da solus bhis aigi as on grein gabus ⁊ as i a speir an speir is foicsi don talmain idir na corpaibh nemdha ⁊ speir na greine an ceathramad os a cinn. Agus gidh fada o ceili iat an trat bis an re fai an grein co direc an en ceim re, is annsin soillsiges si an leth uachtarach don re ⁊ bigh an let laimh rinne dorca ⁊ as annsin as lan re dorca againne. Et as ime sin nach faicmid isin aimsir sin en red don re.

Et an trath fagas an re an ceim direc sin a mbi se fon ngrein ⁊ snaidhes tar eis a ceile uaite sair snamaidh an solus mar sin deis a ceili siar.

An solus ghabhus an cuid uachtarach de on grein soillsigid an bord ictarach de ⁊ is annsin bis an re ar a primh .i. ar a ced solus laimh rinne, oir as i sin ced cuairt dacimid e ⁊ gach faidi da cumscaidinn sair on grein as moidi timceallas solus na codac thuas de anuas ⁊ gac fad sair teit on grein as moidi biseac a soluis tiar ⁊ doni bisec a dhorchadais toir co nuigh a ceithre deg, oir is annsin as rofaidi on grein e ⁊ bis co direc ar a comair don taib eli don talmain ⁊ is annsin bis an temisperium as foicsi dan talmain dhe solus uili ⁊ in temesperium uachtarach dorcha uili. Et mar sin ni bi chaithi gan a leth dorcha ⁊ a leth solas gibe slige a ngabann.

Et an trat claenas an re o diameiter na greine siar .i. on line direc a mbinn don taib ele don talmain ar comair na greine, impoid solus an re laimh rinne suas tar eis a ceili ⁊ in med soillsigter don bord ichtarach ar a primh as i an med sin dorcaidter don cuid soir de ar a guin. Et mar sin an med soillsigter de gach nen aithi co ceann a ceithre deg as i in medi sin dorcaidter dhe gach nen aithi co deredh a mis no co mbi co direach fon grein a nen ceim ria, aturra ⁊ in talam, ⁊ is annsin bis an let bis rinne don re dorcha ⁊ an leth suas solus ⁊ da cur so a ceill co follus dagen fidair annso this a cuireab an grian fo let taeb na talman don taebh tiar ⁊ in re da ceim deg becan os cinn na talman uaithi sair ⁊ scribocad dorca uili e ac an bord iartarach is foicse don grein de, noch foillsiges e da beth ar a prim.

Dagen aris fidhair eli a cuireabh an re a mullac a speiri fein a cinn an sechtmad la don mhi ⁊ a leth solus ⁊ a let dorcha ⁊ cuirfed an grian fo leth taib na talman don taib tiar.

Dagen aris an treas fidair a cuireabh an re toir co direac ⁊ a let uachtarach dorcha ⁊ a leth ichtarach, ata ar comair na greine ⁊ na talman, solus. Et cuirfad an grian an uair sin tar eis dul fai di fo let taib na talman ⁊rl.

As[1] ac so thall an fidair fein.

Daden aris an ceathramad fidair ⁊ scribochad an leth is foicsi don talmain don re solus ⁊ an leth eli dorca amail bis an re annsa fichmad[2] la don mhi ⁊ cuirfed e mar sin thoir co direc ⁊ an grian a medon ichtair na talman co direac.

Daden da eise sin an cuigeadh fidair a cuireab an re a mullach a cercaille fein a nen ceim risin ngrein ⁊ scribocad an leath suas solus de ⁊ an leth anuas dorcha. Et ac so an fidhair don taib amuith don leth ele.

* * *

Da cuis eclipsis an re.

22. POSTQUAM ARGUMENTIS ETCETERA.

.i. Tar eis a derbtha duinn darrmainntibh egintaca ⁊ d'fidracaib[3] geomitreachta gorab on grein soillsigter an re ⁊ na hairdrinnacidh uili, foillseocamaid anois cad o tic dorcadus nadurtha ar in re re nabarthar eclipsis. Agus adermaid dinnsaidhi an adbhur sin, os on ngrein gabus an re a solus ⁊ nac fuil ni ele ann da boinfed an solus sin de ac an talman, gorab e scaili na talman, bis co direc idir an grein ⁊ in re, tet a dimcill an re ⁊ benas solus na greine dhe ⁊ is e an dorcugad sin an re o scaile na talman is eclipsis ann. Agus teagmaidh se co nemmeallta *an gach en mi caithi*[4] oir gac uair tecmas an re do ceann no derball na Dreaguine, curtar annsa line ndirec e ar cert comair na greine ⁊ na talman ⁊ tollaidh se co cert scaili na talman ⁊ dorchaidter uili e. Et an trath gluaisis an re da deiscert no do tuaiscert an scaili sin, seachnaidh se an telclipsis uile ⁊ gibe taeb dib sin a mbaininn se ris an scaili sin, an med bis fai an scaili de, as i an meidi sin bhis declipsis eir sin.

Agus is ime sin ata da gne declipsis ann .i. *eclipsis uneuersalis* .i. eclipsis coitcinn ⁊ *eclipsis particularis* .i. eclipsis rannaighi. Agus is uime sin nach inann aimser a tinnscnann se a ngach en inadh ⁊ nach inann cainndighacht do an gac inadh oir ni hinann med do toir ⁊ tiar ⁊ ni mo is inand a ndeiscert an domain na'na[5] tuaiscert. As

[1] I have followed O'Farrelly's restoration. C.f., footnote comment in Chapter 16.
[2] The three ms copies record conflicting dates. Only the second RIA copy has an acceptable numeral. It reads, "XX la". The ITS edn reads 'deichmad'.
[3] O'Farrelly's punctuation added.
[4] There has been an obvious corruption of the text here. Even those with minimal knowledge of astronomy know that the eclipse of the moon does not occur *an gach en mi caithi* ~ 'each and every month'. One can only assume this phrase has crept into the Tract at the hand of an inept or over zealous scribe. The original meaning of the author can be restored by deletion of the phrase shown in italics and the transfer of *oir* to preface the phrase *curtar annsa line ndirec* . . . Close proposes a slightly different restoration. C.f. footnote to English edition, Appendix I.
[5] O'Farrelly's punctuation added.

uime sin, ni hinann dacit na daine e a cricaib an domuin. Agus an buidhin ar a neirginn la, ni facid siat e ge dobedh se san uair sin ann do rer naduir. Et na diaigh so aderam declipsis na greine na inadh fein.

Eclipsis na plained ele. As plained acu fein as cuis declipsis na plained ele, oir is e an plained as isli dorchaides an plained is airdi. Et ar in nos cedna, as e an re dorcaidhes iat uili uair ele fa sec. Da cur a ndobart a cell ar eclipsis nis mo dogen fidair gheomitric annso tis as a ticfither an teclipsis co follus.

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23. MANIFESTUM EST ETCETERA.

.i. As follus mar adubramar solus na nairdrinnach uili da teacht on grein ⁊ a mbeit comcruinn mar liatroid amail ata grian ⁊ esca ⁊ is i cuis um nac follus a cruinne mar as follus cruinne na deise ele sin .i. a mbeit uili don taib thuas don grein a fad uainn a negmus Uenir ⁊ Mercuir. Agus soillsigter leath gach en retlainne ata don taib thuas don grein uaithi fein, gibe inadh a mbid na retlanna sin na cercaill fein .i. mas a nen ceim re grein na mas a fad uaithe no mas a fogus di no roimpi no na diaigh, as uaithe sin gabaid uili solus. Et gach uair bis ceachtar do na tri plainedaib ata os cinn na greine ar a comair co direac as ann as aibsidhi a solus ar comair na talman ar da cuisib. An ced cuis acu an duine bis a ndorcadus, as aibsidhidi leis an solus daci se don taib amuit don dorcadus na leisin duine bis annsa solus fein ⁊ is uime sin, an duine bis a scaili tiudh dorcha na talman annsan aithi, ag fecain uadha na plained bis ar comair na greine co direc, is aibseach leis an solus tre mhed an dorcadais bis na thimceall fein. Cuis ele, an tan curtar ceachtar do na plainedaib co direc ar comair na greine is egin di impod na cercaill fein tar a hais ⁊ is aibhsididi a solus an timpodh sin oir is foicsidi da talmain hi ⁊ ni tecmann so co brac is na plainedaibh bis don taibh tuas don grein.

Agus na plaineda ata fai grein .i. Mercuir ⁊ Uenir, ni roitit siat co brach ar comair na greine ⁊ ni roitit an en cuil do na ceithre cuilib ⁊ ni hedh bid ac laim ria co brat, roimpi no na diaigh ⁊ gach foicsi bid don grein as lugaide a solus, ⁊ gach fad uaithi bid as moidi a solus.

Solus uero na plained teit ar comair na greine, bit ac fas caithi tar eis a ceili conuic an inadh tar nac fedaid dul ⁊ inab egin doib impodh dinnsaighi na greine aris ⁊ as annsan impoidh sin bith a sholus san ar dombisec no co mbit siat ar en ceim risin grein fuithe ⁊ annsin bith an leth as foicsi don grein dibh solus ⁊ in leth ele dorcha, mar adubrumar don re, an trat bis a nen ceim re grein, oir ni faicter e co brac acht an tan bis da ceim deg a neach as luda da taib egin don grein .i. ar a prim no ar a firderedh.

Agus is e an modh cedna ata ac na plainedaib sin oir an trath bid siad toir da ceim deg roim in grein ag impod cum na greine no an trat bid da ceim deg don taibh thiar don grein ar sibhal, dacitar adharcach iat ar cuma an re nua; ⁊ an trat tiaghait on grein mar nac fedaid dul nis faidi, bith a lan solus acu. Gidedh ni follus an claechlod sin duinne mar as edh claechlod sholus an re oir is faidi da moran uainn iad na an re ⁊ as uime sin an trat is mor a solus as bec a toirt ar a fad uainn. Et an tran is foicsi bid don talamh daciter an lasair eirghes dib uair fada ⁊ uair gerr ⁊ uair ceithreuilinnach da rer

chuma a cirp. Et an uair is faidi bid o talmain ni mar sin daciter an lasair cedna acht comcruinn, mar bis an tene a fad uait, gibe cuma bis ar in lasair innte fein, cael no fada no letan no gerr ⁊ ni mar sin daciter hi a fad, uait ach comcruinn.

Et ac so this an fidair inneosas co follus cinnus soillsiges an grian na hairdrinnaidh uili a negmus na plained, ⁊ foillsigid ciall na fidrach so nac fuil inadh is in doman gan beth deallraigteach solus on grein.

Daghen aris an dara fidhair da foillsiugad cinnus thsoillsighter Uenir ⁊ Mercuir noch ata fai grein uaithe ⁊ cinnus tiaghaid siat ar en ceim re grein mar as foicse fedaid dul di.

Daghen aris an treas fidhair andso da chur a ceill nis mho na mar so mar shoillsithter Uenir ⁊ Mercuir o grein ⁊ cuirfead iat an oirrcir a cercaille as cinn na talmhan innus nac fedaid dul nis faidi on grein na mar bid mochrach roimpi.

Dagen anois an cethramad fidair da foillsiugad nis mho cinnus gabhaid a solus ⁊ cuirfead iat dan leith thiar dan speir os cinn na talmhan isin fhad as mo fedaid dul on grein .i. isin inadh a mbid a leanmhain a nuair easparta.

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24. DICO QUOD LUNA SOLI CAUSAM ECLIPSIS, ETCETERA.

. i. Aderim gorab e an re as cuis declipsis na greine oir as i a speir[1] as ichtaraighe sis do na speirib nemda ⁊ as si speir na greine an cethramad speir don taib tuas de sin ⁊ mar sin gach sibal dani as fai grein bhis. Et an uair tecmas se a cinn no a nearball na Dreaguine a nen ceim co direach ris in ngrein gan claenad da deiscert na da tuaiscert, boinid solus na greine dinne ⁊ is e an dorcadus sin as eclipsis ann. An trat cheana claenas da let deis no cli ⁊ nac sibhlaiginn co direch a ceann no a nearball na Dreaguine fa grein a nen ceim re secnaidh annsin eclipsis da tuismeadh. Et as e corp an re an docardus so daciter sa grein an uair eclipsis do beith ann, ma sedh as follus nac tic eclipsis ann co brach acht an trat bis an re fon grein co direach a nen ceim re ⁊ is annsa leth tiar da grein tinnscnas se co brac ⁊ thoir crichnaiges. Et an trat siblaighes an re dan taibh amuith dan ceim direach sin na greine dorcaidh, uair ann, cuid don grein orainn. Et as ime sin atait da ghne ag eclipsis na greine mar ata ac eclipsis an re .i. eclipsis uili ⁊ eclipsis rannaighi.

Et da rer examlacht na crich bit an teclipsis co hegsamail inntu, oir an trat bis eclipsis ann ni comtrom daciter e an gach cric oir ata cric a faicter e ⁊ cric nach faicter ⁊ crich a faicter nis mo ⁊ cric a faicter nis lugha amail ata so; .i. da mbedh an grian is an line direach os ar cinn an airdi ⁊ an re is in line cedna fuithi da badh egin eclipsis ann duinne. Et da mbedh neach is an uair cedna a noirrcer an domuin ⁊ e ac fecain na greine, dacitfedh, dar leis, hi an iartar an domain. Et da mbedh nec ele isin uair cedna a niartar an domain ac fecain na greine, dacithfedh se, dar leis, hi a noirrcer in domain; gihedh ni faicinn ceachtar acu eclipsis na greine, oir da rachadh radharc gac neac acu co direc idir an grein ⁊ in re ⁊ mar sin ni boinfedh an re, ge da bedh se isin

[1] O'Farrelly's text used. ITS edn reads; *as i a speir speir.*

line direc fa grein ar a fad san on line sin na en corp dorcha, solus na greine dib. Et an pinnsi a ndorcaiter an grian mar sin daciter innti sa lo na hairdrinnaig le med an dorcadais.

Et as girra beris as eclipsis na greine na eclipsis an re le na luas ar aen ac dul tar a ceili ⁊ ni mar sin ata eclipsis an re noch thic on talmain, ni bhi ga chur as ach sibal an re na aenur ⁊ in talam na comhnaighe.

Et gibe neach da ticfadh in ar naguid annso ⁊ aderadh na budh e an re bud cuis declipsis na greine ⁊ da mud e mar adubrumar, na budh chora do san eclipsis da dhenamh na da Uenir ⁊ da Mercuir an trat bid sa line direc fai grein. Et as do sin freagramaid, oir an trat bis Uenir ⁊ Mercuir fai grein a nen ceim re as ar fad bis, gidedh as annsin teit uaithe a meid ⁊ a letead ⁊ is minic theagmas an i cedna don re oir bi fai grein co minic a nen ceim ria ar fad ⁊ gidhed bith a fad uaithe ar lethed.

Amail nach tic eclipsis na greine o na retlannaib as ludha corp nan re ⁊ is foicsi dhi, oir an trat curtar corp bec fa corp mhor a fogus do, gach foicsi da mbi do as lughaidi fhoilghis de, ⁊ trat curtar a fad on corp mor e ⁊ a fogus don radharc bis ac a fecain araen, gach fad doteit on corp mor ⁊ gach foicsi dateit don radharc, is moidi foilghes an corp mor, innas gorab mar sin co foileocadh uball fiadain corp na greine ar in radarc.

Et da cur so a ceill dagen fidair annso tis a ndingean cercall mor amail cercall na greine ⁊ cuirfed an grian na mullach tuas ⁊ dagen cercall ele don leth istigh di sin amail cercall an re ⁊ cuirfed an re fein na mullach thuas annsa line direc fa grein ⁊ dagen an tres cercall don taibh astigh di sin ar cuma na talman ⁊ cuirfed E litir na seantrom ⁊ saimeolad e risin inadh sa talmain as a faicid na daine an grian ⁊ cuirfed A a noirrcer ⁊ cuirfed B a niartar speiri na greine ⁊ cuirfed radarc na ndaine is in line direch o E ⁊ o A ⁊ o B cum na greine. Ma sedh na daine ata a nE dacit siat eclipsis na greine co follus. Et an buiden cedna ata a nA ⁊ a mB, dacit co follus an grian gan eclipsis, oir ata an re robec a fecain na greine. Ni folaidinn an grian orta ⁊ is uime sin ar a fad san on grein teit a radarc co hurusa don taib thuas don re dinnsaighi na greine.

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25. LUNA NON VIDETUR PRIUSQUAM, ETCETERA.

.i. Ni faicter an re co brach no co mbinn se da ceim deg on grein oir ni liginn treisi tsoillsi na greine duinn a faicsin ⁊ binn se da ceim deg ⁊ on grein an tan foillsiter e laca rinne ar tosac ⁊ is annsin bis ar a primh .i. ar a ced solus, ⁊ teit an grian fai da lucht oirrcir an domain ar mbeth don re ar aen ceim deg uaithi, sul daciter e, an trat bis si ac soillsiugad da lucht iartair an domain co follus ar mbeth dan re ar da ceim deg no nis mo on grein. Et mar sin as tusca da cit lucht iartair an domain an re na lucht oirrcir den la amhain. Et mar sin an trat bis an re da ceim deg no tri deg no becan nis mo on grein as bec an cainndighacht a faicter e. Et an trat bis *o ocht ceiminna deg co tri ceiminnaib fichet*[1] on grein as annsin as mo a cainndighacht.

[1] There is obvious corruption of the text here. It should read; *ceithre fichit ceim ⁊ ced* – 'one hundred and eighty degrees'. The reference to 18°, is probably a misreading of the angle in its numerical form

Degsamlacht soluis an re ⁊ na nairdrinnach. A negsamlacht.

26. DICO QUOD LUNA AC SIDERA, ETCETERA.

.i. Aderim co faicter an re ⁊ na hairdreannaidh a nen uair ⁊ a nen aimsir co solus a crit ⁊ co dorca a crith ele. Lucht na crite dachi iat co solus, as e dabeir orra a faicsin .i. an aitchi da leth dibh annsan aimsir cedna. An la baines da lucht na crite ele gan a faicsin ⁊ ni he cinta an lae dabeir sin acht anmainne radairc na ndainedh. Et mar sin an cric an a foillsigter an grian, folaidter an re ⁊ na hairdrinnaidh risin fad sin uirre, ⁊ an trat folaidter hi as i foillsiges iat san; ⁊ mar sin bis an tene ⁊ gach ni solus ele, ach ge fada uait iat san aite is aibsec a solus ⁊ ge mad fogus duit sa lo iat as anaibsec a solus. Ma sedh ma sailter let na hairdrinnaidh dfaicsin sa lo, imid mocrach no tratnona a poll dorcha domain ⁊ fec os da cinn ⁊ dacitfir iat a mullach na firmaminti os da cinn co follus et dacithfir iat an uair eclipsis na greine co follus.

Dagen anois cercall amail cercall na nairdrinnach ndaingean ina cuireabh imdenamh morain do na hairdrinnacaibh mora. Daghen speir ele don taib astigh di sin amail speir na greine, an a cuireb an grian fein ⁊ dagen dan taib astidh di sin speir ele amail speir an re in a cuirib an re fein a cinn an deichmad la fichet o thosach an mi. Et daghen in cethramad speir don taib istigh dib sin ⁊ scribocad hi na sentrom ⁊ A na hoirrcer ⁊ B na huachtar ⁊ C na hiartar ⁊ D na hictar; ⁊ na ceithre cercalla beca ata ar cercall na talman ceatra catracha tuicter asta ⁊ ceatra litreca foillsiges na ceithre catracha sin E an catair oirrcerach ⁊ F an catair uachtarach ⁊ B an catair iartarach ⁊ H an cathair ichtarac ⁊ mar sin an trat teit an grian fai, fagaidh a solus cathair F ⁊ tic tosach na haithi cuci ⁊ annsin as medon aiti a cathair E ⁊ dacit lucht na cathrac ele an uair sin na hairtrinnaidh lansolus ⁊ an re ag erghi thoir lethsolus; ⁊ an trat roites an re cathair H, bit a mullach na firmaminte an tan sin; ⁊ an trat eirghes an grian toir don cathair sin, ni fedaid lucht aitrebta na cathrac an re naid na hairdrinnaidh a faicsin. Et an trat roithes grian os cinn catrac G bith a mullach a cercailli ⁊ is annsin as medon lae ann ⁊ bith an re annsin sa let tiar don doman as cinn cathrac H ⁊ ni foillsigid na hairdrinnaid a solus fein da lucht catrac G.

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27. CONSTAT QUOD QUATUOR SPHAERAE LUNAE, ETCETERA.

.i. Ceatra cercailli innsit na heolaid da beit ag an re; an ced cercall acu re nabur in speir mhor ⁊ le na roluas fein impoidh si le an re en cuairt ris in la co naithe a timcill an domhain ⁊ dabeir air eirgi thoir ⁊ dul fai thiar annsa chuairt sin.

Et muna gluaisidh an speir mhor so an re en cuairt o oirrcir co hiartar an domain re la co naithi mar adobrumar dacitfi e gac nen la ⁊ gach nen aithi gan folach on taca da bedh se ar a prim thiar, ac dul sair tar eis a ceili no go mbedh se fo deredh a medhon na mis toir an oirrcir an domain. Et ar ndol fai annsin da bedh se ar na folach do lo ⁊ daithi no co neirgidh tiar ar a primh aris a tosac na mis ele. Ma sedh as e gluasacht na cercailli moiri noch adubrumar beres an re leis risan la co naithe o oirrcear co hiartar an domain; gidedh as o iartar co hoirrcer an domhain ata gluasacht direc an re fein ⁊ is follus gorab ed, oir an trat bis an re ar a primh tiar dacimid e gach nen aithe ag drut

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by an early scribe. Hindu-Arabic numerals were in use during the working life of the Tract as may be seen in the data entries at the start of ms Stowe B. The 23° is totally erratic.

sair tar eis a celi no go mbi a noirrcear an domain ⁊ as e so gluasacht as nadurtha ⁊ is disli dho, oir as e so gluasacht na speiri a fuil se fein daingin, ⁊ in gluasact eli ut gluaises e o oirrcear co hiartar an domain risin la co naithi, ni fuil acht gluasacht ainneonac minadurtha ann.

An dara speir ata ac an re darub comhainm speir cosmail re speir na comartad ⁊ an trat bis annsa speir so as follus e ac dul andsna comartaibh ⁊ astu, oir an trat teit dinnsaidhi na comartadh ndeiscertach as claenadh uata doni ⁊ gidedh ni facan cursad speiri na comartad co brac.

An treas speir ata ac an re re nabur an speir sa sentrom ata let amuith da tsentrom na talman ⁊ is fogus cuid di son don talmain ⁊ as lan fada an cuid ele uaithe, ⁊ as ar in cuis sin bis in re annsa speir sin uair a fogus don talmain ⁊ uair ele a fad uadha ⁊ is o iarthar co hoircer an domain ata gluasacht na speiri sin.

Et is a corp na speiri sin ata speir bec eli darub ainm in speir impoides le anuas cum an re, ⁊ ata speir an re daingin dogluaisti annsa speir sin mar thairnge a clar. Et as sair gluaises an speir beac so annsa speir so na fuil an re daingin ⁊ an trat roites an re mullach na speiri sin adobrumar, luathaigid se a cursa. Et an trat bis an a ichtar, mallaidh se an cursa cedna ⁊ in trat mallaides dani raed egin impoid tar a ais siar mar da nit na plaineid eli ⁊ gidedh ni follus an timpodh sin mar as follus impodh na plained. Oir an speir sa seantrom ata don taib amuith da tseantrom na talman, tri na roluathi fein ag impodh an re leis, ni liginn an timpod sin impodh an re tar a ais dfaicsin.

Et dagen anois fidair dfoillsiugad na ceithre speir sin.

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Da cercallaib na greine.

28. DICO QUOD SOLI BINAE SPHAERAE, ETCETERA.

i. Aderim gorab da speir ata ag an grein. An ced speir acu da rer na speire lanmoiri gluaises siar ⁊ fuadaiges le o oirrcear co hiartar an domain. Et muna thoirmisceadh sibal na speiri sin an grian da beth si re se mhi diles fein ac dul o iartar co hoircear an domain os cinn talman gan folach. Et da beith an comfad ele sin ac dul o oircer an domain co hiartar gan faicsin ⁊ mar sin da beth leth na bliadna na hen la ⁊ in leth ele na aithe.

An dara speir ata ag an grein darub ainm an speir sa seantrom ata leth amuith da sheantrom na talman mar ata ag an re ⁊ o iartar co hoirrcear an domain ata gluasacht na speiri sin ⁊ is fogus an speir so ⁊ in grian innte le celi da taib don talmain ⁊ is fada on taib ele. Et an trat bis an grian go focus don talmain annsa speir sin, loisgidh si deiscert na talman co mor co fuil an cric sin doaitribthe ⁊ in trat as faidi bhis o talmain annsa speir cedna ni roithinn a tes cum an talman ⁊ ata an mede sin da tuaiscert na talman doaitrebthi o imarcridh fuachta.

Dagen anois fidair da foillsiughadh mar atait an da cercall sin na greine na ceile.

Dordugad na deich speireadh.

29. SICUT DICIT PTOLEMAEUS.[1]

i. Mar adeir an feallsam sin da gne gluasachta dacimid is in firmamint .i. gluasacht acu o oirrcear co hiartar ⁊ in gluasacht eli o iartar co hoirrcear an domain. Et tic grian ⁊ esca ⁊ gach plained don cuiger ele le cainndigeacht leitne a speiri fein annsa gluasacht sair. An gluasacht siar, uero, fuadaid se na plaineid leis siar so contrardha a nagaid a ngluasachta nadurtha fein noch ata soir.

Et aderim aris gorab en gluasacht comtrom ata ac grein ⁊ ag esca ⁊ ag a cuigear eli ⁊ ac na hairdrinnacaibh daingne uile, oir ni fuil acu uili leth ar leath en relta as luaithi na as mailli gluasacht na celi. Et is ime sin ni fuil deitfir is in doman idir gluasacht na greine no an re ⁊ gluasacht na retlann ele, oir is deimin gorab inann naduir ⁊ cruthugad doib. Et ge daciter gorob maille Saturnus nan re ar son na cuisi inneosamaid aris, as comtrom a ngluasacht.

Agus mar adeir Partholomeus ⁊ na feallsamain ele, deich speiri mora ata ann ⁊ is inann gluasacht don speir as mo dib sin re nabarthar an speir lanmor ⁊ do speir na comartad oir is siar gluaisid araen.

Gluasacht an ocht speire uero .i. speir na nairdrinnach ndaingin ⁊ na greine ⁊ an esca ⁊ cuigear ele o iartar co hoirrcer an domain ata, amail adubrumar co minic, ⁊ don taibh astigh da ceili ata suidiugad na speir sin ⁊ is i speir an re as faicsi don talmain dib ⁊ speir Mercuir annsein ⁊ Uenir ⁊ na greine don taibh amuith dib sin ⁊ speir Mars ⁊ speir Iubiter ⁊ Saduirn don taib amuit dib sin ⁊ speir na nairdrinnach ndaingin don taib amuith dib sin. Agus ni har son nach gluaisid siat aderur airdrinnaigh daingne riu, oir gluaisid o oirrcear co hiartar an domain mar danit na plaineid ele, ⁊ ni hedh, acht ar son nach claenaid siat o tuaiscert co deiscert na firmaminte mar danit siat sin. Speir na comartadh an naomad speir. Agus don taibh amuith dib sin leth ar leth ata an deichmad speir darub ainm an speir lanmor no an speir direch dainm ele. Agus as so amuit fidair as a tuicter uile iad .

Adubart tuas gorab luaithi an re da rer fecsana na Sadurn. Da mbeith an re a cercaill Saduirn da beth se deich mbliadna fichet ag sibal mar bis Sadurn. Et mar sin da siboladh Sadurn cercall an re, da mbeth ann re *secht la fichet no re ceithre*[2] seachtmaine ach en la, mar do ni fein. Et as mar sin as e cumhga an rotha bis acu sin ⁊ fairsinge an rotha ele dabeir co faicter na plaineid ata innta luath no amhluath ⁊ ni he co fuil siat mar sin, oir as cert inann cursa ⁊ naduir, luas ⁊ amluas doib. Et da ndearntaid tri fichit ⁊ tri ced cuit comtrom co seantrom na talman da speir Saduirn ⁊ crut cruinn da cur ar gac en cuid acu sin do bo comhtrom gac cuit acu re speir an re. Et da mbeth speir an re lethan ⁊ nai nurdail deg ⁊ a da fichet ⁊ a tri ced[3] urdail do chur

[1] The Marsh MS has at this point; *Dico ut dixit Tolemeus.*
Stowe B has; *Sicud dicit Partolomeus.* It seems that some pious scribe has thought it fitting to Christianise the name of the old pagan philosopher, the result being Bartholomew. A similar change is found in Chapter 12 of the Marsh copy, where Omar, the Saracen Khalif of Egypt, is transformed to *Thomais, Righ na hEighifti* ~ King Thomas of Egypt.

[2] I have used O'Farrelly's restoration in this sentence. Minor scribal confusion has led Power to a contradictory sentence in both the Irish edition and the resulting English translation.

[3] For some unknown reason, this minor variation has crept into the Tract. It should read; *tri fichit nurdail ⁊ tri ced.*

na ceann fein ⁊ crut speiri da cur air sin uile, ni mo na mar sin da beth comtrom re speir Saduirn. Et as mar sin derbtar gorab e cumgacht ⁊ fairsinge cercall na planet dabeir sibal luath dfaicsin ac cuid acu ⁊ sibal amluath ac cuit ele gin co fuilit mar sin mar adubrumar co minic.

Et da scriob Tolomeus eisimplair follus dfoillsiugad an da gluasacht adubrumar tuas, o oirrcear co hiartar ⁊ o iartar co hoirrcear en domain. Da ritad rotha o oirrcear co hiartar an domhain risin la co naiti ⁊ co mbedh cereall bec a dimceall tseantroim an rotha sin ⁊ cercall budh da comor ria sin don taib amuith de ⁊ an treas cercall leth amuith de sin bud tri mho nan ced cereall. An cethramad cercall don taib amuith de sin o cethri mo nan ced cercall ⁊ mar sin suas co nuic an ochtmad cercall ⁊ liatroid da bet in gac en cercall acu fa let ga gluasact o iartar co hoirrcear an domain, ⁊ is cosmail an rot so re speir lanmoir an domain ⁊ na cercalla beca sin adubrumar re cercallaib meadhonaca na speiri moire sin. Ma sedh an trat impoides an ced cercall a timceall ar tus, bith an dara cercall ar in dara cuit da timcill ⁊ in treas cercall ar in treas cuid ⁊ an cethramad cercall ar in cethramad ⁊ an cuigmad ar an cuigmad ⁊ in sesed ar in sesed ⁊ in sechtmad ar in sechtmad ⁊ in ochtmad ar in ochtmad. Et mar sin an trat darachadh an ochtmad cereall timcill uili, daracad an ced cercall re hocht cuartaib timcill. An fad da bedis na hocht cercalla so a coimhlinadh a cursa timcell as mor minic atarra sin dimpodh an roth o oirrcear co hiartar an domain ⁊ da tinnscondais na hocht cercalla a sibal fein ⁊ da gerugad inntleachta an legtora do cuirimar an tsamail so sis.

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30. SCIENDUM EST QUIA MAXIMA SPHAERA, ETCETERA.

.i. Bith a fis agad gorab hi an speir romor as speir direach ann ⁊ as mor da baramhlaib secranaca tugadar na haineolaid di, oir adobradar ar son gorab i as airdi ⁊ as oiredha ⁊ as luaithi do na speirib gorab hi tuismidhteoir an domain hi. Agus coimlinaidh si a cursa re la co naithi ⁊ atait tri fichit ⁊ tri ced cem Stodiacus innte fein ⁊ is na hagaid so gluaises speir na nairdrinnac ndaingin o iartar co oircer an domain ⁊ bit ag sibal en ceme ced bliadain[1]. Et gach en speir da speirib na plained da rer a cumgachta ⁊ a fairsinga coimlinaid a cursa.

An speir lanmor cheana, ata gac aen taeba a timcill na speiredh eli, follamnaigid iat ⁊ dabeir orra impodh o oirrcer ho hiartar an domain ⁊ as i so cuis ag la ⁊ ag aithi, ac solus ⁊ ag dorcadus ⁊ ag examlacht na naimser ag earrac ⁊ ac samrad ac fodhmar ⁊ ac geimreadh.

Et don taibh astigh don speir so cumhdaigter ⁊ folamhnaiter ⁊ gluaister gach uili ni ar teithead co claechligdis uair egin a stait no a suidheochan no a nordochan ⁊ is i so dani na plained co soimpaidtec ⁊ an talam co dogluasta, oir da mbeth an talam sogluasta ni coinneochadh la na aithi a cursa fein mar donit anois ⁊ ni derbochaighi cursa na plained ⁊ rotha na firmaminti mar doniter anois. Agus ni fuilit retlanna annsa speir sin.

[1] Both ms Stowe B and the Marsh copy read *deic ced bliadain.* The word *deic* is an erratic acquisition that is unlikely to been in the original compilation. The corresponding line in Stabius reads; *in omnibus centum annis.*

Agus adubradar na haineolaidh co fuil anam innti 7 gorab uaithi gabus gac uili ni anam. Agus aderimsi gidh mor a cumachta an gac uili ni da ndubrumar gorab o na tuismigteoir fein ghabus si na cumachta sin. Et da derbadh gorab edh ni feas ca hobair doni neach no co mbi tar eis a denmusa. Ma sedh o bis fis gac uili gnimha da tig on speir lanmoir againne sul doniter iat, as o nec eli doniter na gnimarta sin 7 ni huaiti fein.

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31. SECUNDA SPHAERA POST MAXIMAM SPHAERAM, ETCETERA.

Is i in dara, speir tar eis na speiri lanmoire 7 is foicse na hi don talmain 7 Stodiace .i. speir na comartadh 7 ata leis gan retlanna mar adubrumar an speir lanmor da beth, 7 gluaissidh o oirrcer co hiartar an domuin mar gluaises si. Et da sailidar na harsanta gorab i so na nai speir ele 7 gorab cercall da cercallaib na speiri lanmoiri hi 7 scrisaidh Tolameus an baramail so a na lebar fein 7 adeir co fuair idir an speir lanmoir 7 Stodiacus na creasaib 7 na pollaib spas fada, oir fuair pol tuascertac Stodiac a ceitre ceiminnaib fichet nis airdi nan pol cedna ac an speir lanmoir. Et fuair pol deiscertac an Stodiace ceithre ceiminna fichet eli fan pol cedna ag an speir lanmhoir. Et atait creasanna na speiri so ceithre ceiminna fichet o celi a mullach na firmaminnti. Et as uime sin cuiris Tolameus deich speireadha ann 7 is don naomad speir labramaid an trat adermaid grian no esca no plained ele da beit a ceim egin do comartaibh na speiri sin.

Et as i cuis fa ndobart na hanmanna so .i. Airgeis no Taubhrus, Leo etectera, ar comartaib na Stodiace, ar son co ticid na hairdrinnaigh a speir na retlann ar comair na codac sin da Stodiace ar a mbi Airgeis no Tabhrus mar ainm, le cuma le naduir na nainminntedh cedna againne annso, 7 gidedh ni fuil cruthugad is in doman a Stodiace, oir mar adubrumar, ni bi retla ann.

Et darinneadar na feallsamain da chuid deg da Stodiace 7 adubradar comarta re gac cuit da rer anma 7 fidrach an raeda bis fai in comartha sin is in line direc a speir na retlann. Et darinneadar mar sin da chuid deg don bliadhain da rer an da comarta deg sin na greine 7 adubradar mi re sibal na greine an gac comarta dib 7 do muinedar na feallsamain as sin examlacht na haimsiri da beth ann da rer sibail na greine o comarta co conmartha 7 da rer a hardaithe 7 a hislithe, oir an trat tet grian annsa ced ponc dAirgeis tic exinocsium ann .i. comhtromacht lae 7 aithe 7 is annsin tinnscnus an terrach; 7 ni teit as no co mbi grian a nGemen 7 in trat teit grian a Cainnser as annsin as tosac don tsamradh. Et ar mbeth di ainnsin a mullach a speiri thuas, teidhid an grian co mor agaid na talman 7 ar tiact di co ponc derinac Uirgo, cuiridh cric ar in samradh. Agus an trat teit co ponc derinnach Libra, bit an dara exenocium ann 7 tinnscnaidh an fodhmar annsin 7 ni teit as no co mbi grian a ponc derinach Saigitarius. Et an trat bis a ponc deighinach Caipricornus tinnscnaid an geimreadh 7 bith ann no co mbi aris a ponc deighinach Airgeis 7 tinnscnaidh annsin aris an terrach.

Et as i cuis dabeir co mbi geimread ann as fuaire na celi 7 geimreadh as flichi na ceili 7 geimridh as tirma na celi 7 samradh as teo 7 samradh as tirma na ceili ann .i. as i an grian doni earrach 7 samrad, fogmhar 7 geimredh 7 donit na plaineid ele na haimsera

cedna. Agus an trat tic samradh na greine ann 7 bid na plaineid eli a comartha a ngeimrid fein, bit acmuinn mor fertana 7 fuachta is in tsamradh 7 an trat tic geimread na greine 7 bit na plaineid eli is na comarthaib foillsiges a samradh fein, bith gaeth 7 becan fertana 7 fuachta is in geimread sin co hairithe, 7 is mar sin do na haimseraibh eli 7 is i sin cuis teasa 7 fuachta, tirmaigachta 7 flicha ceithre naimser na bliadna .i. da rer imteachta na plained a comartaib an Stodiace mar dordaidh an tuismighteoir benaithi fein iat.

* * *

32. DICO QUOD SATURNUS PER QUATTUOR, ETCETERA.

.i. Aderim mar atait ceithre gluasachta ag Sadurn co fuilit ceithre speiri aige a ngluaisinn se .i. an ced gluasacht dib, an speir lanmor o oirrcer co hiartar an domain. An dara gluasacht, a gluasacht nadurtha fein o iartar co hoirrcer an domhain. An treas gluasacht .i. gluasacht na speiri na fuil fein daingin 7 a siblaighinn co direc no tar a ais co luath no co hamluath. An cethramad gluasacht .i. gluasacht na speiri sa seantrom ata leth amuith da seantrom na talman 7 as ar in speir sin toctar gac plained gac fad fedtar suas on talmain 7 licter sis gach foicsi fedtar don talmain. Et is iat so na ceithre gluasachta ata ag na plainedaibh uili a negmus na greine ag a fuil da speir 7 da gluasacht.

Et scribocad aris na ceithre speiri sin maille re na ngluasachtaib fein 7 dagen ar tosac fidair na speiri moiri 7 fidhair na talman ar a lar 7 cuirfed A na hoircher 7 B na huachtar 7 C na iartar 7 D na hichtar 7 is amlaid ata gluasacht na speiri moiri ó A co B 7 o B co C 7 o C go D 7 o D go hA.

Et dagen fidair an dara speir noch gluaiseas o iarthur co hoirrcear an domain noch ata fan speir moir 7 ata sa line direach fan Stodiaca 7 is amlaidh ata Stodiaca gu claen 7 an speir lan mor go direach os ar cinn oir mar adubrumar as fada a poil 7 a ludrach o cheile.

Et dagen fidair an treas speir sa seantrom ata don taib amuit da tseantrom na talman don taibh astig don da speir roimhe 7 as e inadh a fuil seantrom na speiri so a ndeiscert seantroim na talman da ceim co leth da rer thomhais lethni na speiri 7 ata ar na roinn a fiche 7 a ced cuid, 7 ata an speir so a fogas don talmain da taibh de 7 a fad uada da taib ele.

Et dagen fidair an cethramad speir noch connmas corp an plaineid innti co dangin dan taib astid do na tri speirib ele. Et as amlaid ata seantrom na retlainne sin mar ata seantrom na speiri a na fuil 7 as amlaid gluaises o iartar co hoirrcer an domain 7 a mullach na speiri sa seantrom ata leat amuigh da seantrom na talman ata seantrom na plained sin mar tairngi daingin dogluaisti a speir 7 ni cursa direach mar soigit ata ag na plainedaibh ac cursa cruinn nadurtha mar roth cartach a sibul o iartar co hoircer an domain. Agus da mbeth tairngi a lethimill uachtarach na cartac dagenadh sibal o iartar co hoircer an domain a dul sis cumh na talman ni gluaisfeadh siar na soir 7 in trat da roithfeadh an talam dogenad a cursa da claenadh o oirrcer co hiartar 7 in trat deireochad o talmain suas ni gluaisfedh siar no soir. Et mar da suigeadh an mullach

uachtarach da gluaisfed annsin soir. Et as i so an cuis dabeir ar na plainedaib sibal direc uair ⁊ sibal tar ais uair ele ⁊ sibal digair uair ⁊ sibal mall uair ele da genamh.

* * *

33. POSTQUAM SATURNI SPHAERA MOTUS, ETCETERA.

.i. Tar eis mar dinnsimar speir ⁊ gluasacht Saduirn ⁊ na plained ele inneosamaid anois cinnus impoid tar ais, re nabur retrogradcio .i. caissimpodh .i. an trat impoides an planed tar a ais o Airgheis co Pisis.

Et da cur sin a ceill dagen fidair da speir Saduirn ⁊ cuirfed don taib amuith dib speir na comartadh ⁊ dagen da cuit deg di ⁊ tar eisi sin cuirfed dan taib astigh di speir Saduirn sa seantrom ata don taib amuith da seantrom na talman ⁊ cuirfed na mullach tuas an speir ana fuil corp an plaineid co daingin ⁊ cuirfed na diaigh sin an talam na inadh fein ⁊ E ar a lar ⁊ cuirfed Sadurn a ceithre cereallaib beca a dimcill a cercaille fein. Et cuirfed an ced cercall da na cercallaibh beca sin a mullach a cercaill fein ⁊ line trit idir Airgheis ⁊ Pisis. Et an dara cercall a ninadh a ced comhnaighe ⁊ B ar a lar. An treas cercall a ninadh an caisimpoidh ⁊ C ar a lar. An cethramad cercall a ninadh an dara comnaighe ⁊ D ar a lar. Agus tarrongad tri line o seantrom na talman suas tri Sadurn co cosmailus na comartad ata a speir na nairdrinnach ndaingin. Et as iat na linedha sin radarc na sul o talmain suas dinnsaighi Saduirn ⁊ cuirfed an line as dirgha dib sin o talmain suas dinnsaighi A, ⁊ is mar sin an trat bis Sadurn a ninad A a tosac Airgeis bith se annsa Stodiaca ⁊ soir co lan direach bis a sibal ⁊ ar sibal do mar sin sair a nAirgeis ceiminna airithi claenas se co B ⁊ an trat tic annsin ni gluaisinn sair na siar ⁊ is ime sin as e sin a ced comhnaighi; ⁊ an trat fagas an tinadh sin gluaisid siar co D ⁊ is e sin as inadh caisimpoid do; ⁊ as annsin bis gluasacht lan direach aigi o oirrcer co hiartar an domhain, ⁊ ac dul siar do an trat roites inadh C as e sin as inadh an dara comnaighi do oir ni gluaisinn annsin soir na siar. Et gibe neach dfecfadh annsin o medon na talman suas dagebadh se annsin a Pisis an Sadurn da bi roimhe an Airges ⁊ ar fagail D do thoir rachaid tar eis a ceili suas aris co hA. Et as i sin an chuis fa faicter na plaineid uair is mo na ceili iat, oir in trat donit caisimpodh chum na talman as ann as aibsigi daciter iat.

Et gach ni da ndubrumar ar speirib ⁊ ar gluasachtaibh ⁊ ar gach naduir ele da fuil ac Sadurn is coir na neice cedna do tuicsin ar Iubiter ⁊ ar Mars o nach fuil deichfer aturra na sibal na na ngluasacht na na ngnimartaib. Et teagmaid na nethi cedna do na tri plainedaibh ata leath anis don grein gin co follus ar in re na neti sin tri roluas a speiri sa seantrom ata leth amuith do seantrom na talman, oir in speir connmas in re co daingean as sair ghluaise ⁊ an trat do ni an caisimpodh tar ais as siar gluaises ⁊ is ime sin nac follus an timpodh sin ⁊ gidedh is follus a sibul ele ⁊ a comnaighi, oir bith la ann a siblaiginn da ceim deg ⁊ la ele na siblaiginn ceithre ceiminna deg.

* * *

Da speir [na] nairdrinnach ndaingin.

34. HAEC SPHAERA OCTAVO SITUATUR IN LOCO, ETCETERA.

i. Ata in speir so ar na suigiugad san ochtmad inadh sa firmamint ⁊ ata ar na cruthugad da samlacus Airgeis ⁊ Tabrus ⁊ Geimin ⁊ comarta eli Stodiace. Agus as amlaid gluaisid airdrinnaidh na speiri sin co cert comtrom ⁊ co comfada ⁊ go comhfogus da ceili is gac en aimsir tri bithu sir o iartar co hoirrcer an domain, oir ni bi luas na mailli na sibal direach na caisimpodh acu mar bis ac na retlannaib seacranacha. Agus bid ced bliadhain ac sibal en ceme da ceiminnaib na speiri moiri.

* * *

35. AD HAEC INDICANDA GEOMETRICA, SUNT.

.i. Da lorgaireacht an adbuir so is egin arrmainnte geomitric dfagail da creidfeam co neamhcunntaburtach. Dagenum ma sedh fidair na talman ⁊ cuirfed E na seantrom ⁊ tarrongad cercall ele o na tuaiscert conuice a deiscert ⁊ tarrongad line direach Pol Airtic co Pol Antairtic trit an talmain ⁊ tri cercall na talman ⁊ cuirfead A a mullach na firmaminnti ⁊ B a pol tuaiscirt an cercaill ⁊ C fai tis ⁊ D na pol deiscertach.

Ma sedh gibe nec da beth a ninad E ⁊ dagebadh an astrolaib na laimh, oir is le sin dagebtar fis lan deimhin an raeda so, ⁊ da cuirfed a edan ar line medonac na hastralaibh ⁊ da coinnemad hi ar snaithi o na ordoig sis ⁊ do fecfed Pol Airtic tri dha poll a da clar, dagiaba se an pol sin comtrom risin talmain. Agus da siblaidh o E se mili ⁊ tri fichit mile ⁊ da trian mili co B ⁊ an astrolaib da cur ar comuir Poil Airtic annsin ⁊ a fiachain triti mar do rinne roimhe, dagiabtha *en*[1] ceim ar airdi ann os cinn na talman ⁊ en ceim amhain do na tri fichit ⁊ do na tri ced ceim na hastrolaibh foillsiges a beith mar sin.

Et da ngluasir aris as sin dinnsaighe B, se mili ⁊ tri fichit mile ele ⁊ da trian mili ⁊ an astrolaib da cur ar comair in poil cedna ⁊ a fecain mar dorinne roimhe dagiabad se da ceim ann ar airdi os a cinn ⁊ mar sin co brach o E dinnsaighi B dagiabadh a cinn gach se mili ⁊ tri fichit mili ⁊ da trian mili no co soitedh B, ceim ag fas ar airdi ar in Pol cedna. Agus med na milted sin uili ar en slighi, as edh donit siat da rer cainndigachta na tri fichit ⁊ na tri ced ceim ata a dimcill speire na talman, ceithre mili fichit da miltib; as e sin tomus timcill o cercall an uisce ⁊ na talman. Et as ed, ata an *alcoterra* .i. a tight cercailli na talman ocht mili do miltibh ⁊ is mar sin is a ceithre mili do miltib ata co sentrom na talman ⁊ is tri mile ar feth an fad is coir da gach mili acu sin da beth ann.

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[1] The Stowe B & Marsh copies read *se.* It is an obvious scribal slip. The correct angle is used elsewhere in this chapter.

36. ANTIQUI LINEA AB ORIENTE AD OCCIDENTEM, ETCETERA.

.i. Da smuaintigheadar na harsanta line dar lar na talman co direach on a oircer conuig a iartar comtrom re line eccinoccialis ⁊ dfagadar againne gorab comfada on line sin co Pol Airtic ⁊ uada co Pol Intartic.

Et is idir an line sin ⁊ Pol Airtic ata cuit daitrib na ndaine don talmain gin co soaitribthi an cuit sin uile de. Et on line cedna co Pol Antartic, ni fedann ainmide is in doman beth beo ann tri imarcraid teasa. Oir os annsa speir sa seantrom ata leth amuith da seantrom na talman, imarcear corp na greine a timceall na talman ⁊ os don taibh sin ata claenad na speiri sin as egin gorab rotheo an taeb sin na gach taeb eli don talamh ⁊ as bec ar a mo an teas ata sa taib sin nan fuacht ata sa taibh eli ar a comhair. Et as ime sin, a ndeiredh na codac ud tuaigh don talmain, tre rofad na greine uada, ni fuil en raed ach a lan da nelaib dorcha ⁊ da gaith ⁊ dfertain, da reodh ⁊ do shneachta ⁊ dfuacht mor. Agus is ime sin ata an tinad sin doaitrebtha, ⁊ an tinad cheana ata fa in line eccinoccialis measardha.

Et atait laeithe ⁊ aiteda na bliadna gus an en raed comfada re celi annsan inadh sin. Et as on line sin ata egecinoccialis conuic an crith tuaiscertaigh doaitrebtha ata an cuit fedtar datrebadh don talmain. Darinneadar na harsanta seact codcanna don cuid sin ar fad o oirrcer co hiartar na talman mar foillsiges an fidair so.

Do naduir na crich sin.

Et as on line ata fai eccinoccialis tinnscnus an ced clima ar letead ⁊ ata ar fad mar adubrumar o oirrcear co hiartar an domain ⁊ ni teit an la ar fad tar da uair deg ⁊ da drian uaire go direach fa do sa bliadain ⁊ ni bi nis girra na en uair deg ⁊ treis mir uaire. Et bith an grian fa dho sa bliadhain os cinn lucht na crice sin .i. an trat teit si o deiscert co tuaiscert na firmaminti ⁊ as sin co deiscert aris ⁊ mar sin bid da samrad an en bliadain is in cric sin. Et ni claenann an scaili co brach annsa cric sin on a tuaiscert conuic a deiscert.

Naduir an dara clinia: dani imarcaig gainim na crici sin co rothe hi fein, oir tet teas na greine astec annsa ngainim ⁊ bruithid ⁊ doighidh aghaidh na talman ⁊ an trat tig gaeth mor ann cruinnigid an gaineamh ⁊ doni cnuic ⁊ sleibti dhe ⁊ uair ele, scailidh e. Agus daine duba re nabarthar fir gorma ⁊ fuilt chasa acu lucht aitribthe na crici sin. Agus ata acmainn mor oir annsa cric sin tre imarcraid teasa na greine ac bruith aithe na talman. Agus ni ha fedanaib ⁊ a cuisleannaibh na talman dageibter an tor sin mar dageibter an tairgead ⁊ in sdan ⁊ na mitaill ele sin, acht ar a uachtar. Agus ni teit an la tar tri huairibh deg suas co brach na tar *en uair deg*[1] sis annsa cric sin.

Naduir an treas clima: as ludha teasbac na cric sin na na crici roimhe oir ni bhi an grian is in line direach os a cinn co brac acht a solsticium in tsamraidh tamall gerr ⁊ is mesardha an cric sin na gach cric da ndubrumar. Et as amlaid ata lucht aitribthi na crici sin ⁊ dath riabach ⁊ fuilt cassa ⁊ cuirp caela acu. Agus is gerr suas o talmain fasaid croinn na crice sin. Agus ni teit an la tar ceithre huairib deg suas ⁊ ni mo thet tar deich nuairib sis co brat annsa cric sin.

[1] Both Stowe B and the Marsh copy read *da uair deg* for the lower limit of the daylight hours in this region. It results from either an early scribal error or a lapse in concentration on the part of the Irish author. Either way, I am sure the Irish author would have appreciated this belated 'proofing'.

Naduir an cethramad clima: as mesardha coimplex na crici so na na cric ele adubrumar, oir ni fuil imarcridh fuachta na teasa acu ⁊ atait acmainneach conaith fa crannaib examla ⁊ fa tortaib imda na talman ⁊ fedaid lucht aitribthe na ced crici ⁊ in dara crich soaitrib da dhenamh innte co nembaedlach. Et as amlaid atait lucht aitribthi na crici sin a ndath buighe idir geal ⁊ riabac ⁊ atait inntleachtach somuinti ⁊ cuimhne fhada acu ⁊ eagna mor ⁊ in annsa cric so as lia da bhi da lucht an iuil mhoir ⁊ na heagna ⁊ da lucht an croide mhoir ⁊ arrachtus cuirp; ⁊ is ferr blas uisce na crici sin na na cric ele. Et ni teit an la tar cuig uairib deg suas na tar naoi uairib sis co brach is in cric sin.

Naduir an cuigmad clima .i. is ludha a teas ⁊ is mo a fuacht nan cric sin roimpi ⁊ gidhedh as lia a croinn ⁊ as fearr toradh a ngort. Agus is amlaid atait lucht aitribthi na crice sin ⁊ coirp mesardha acu, a ndath cumusca, as foicsi da geal na da riabac, is ludha a negna ⁊ as girra a saedhal ⁊ is conaithi iat na lucht na crici roimpi; ⁊ fasaidh an la co se huairib deg ⁊ bith ar dombisec co hocht nuairib annsa crit sin.

Naduir an seiseadh clima: as ludha a teas ⁊ is mo a fuacht ⁊ is ludha torad a crann ⁊ a ngort tri mhed a fuachta na na cric roimpi ⁊ is imdha sneachta ⁊ fertain ⁊ neil ⁊ tobair ⁊ srota ⁊ cnuic ⁊ slebti na crici sin. Et as amlaid ata lucht na crice sin ⁊ cuirp anmanna acu, a nath geal ⁊ fuilt thslime ⁊ iat co bruidimail domuinti. Et atait secht nuaire deg is in la as faidi sa cric sin ⁊ ocht nuaire co leth sa lo as girra.

Naduir an sechtmad clima: easbaidh teasa ⁊ acmainn fuachta. Et as amlaid atait lucht aitribthi na crici sin innleachtach domunta ⁊ ciall anmann ⁊ cumne bruidemail ⁊ cirp anmanna ⁊ fuilt findbuidhi tslime. Agus da ndeachdais lucht aitribthi na crici so is in ced cric no sa dara cric no da ticdis lucht na crici sin innte so dagebdais bas leth ar leth tri claechlod an aeir.

Et as mar sin an cethramadh cric as mesarda ⁊ is ferr acu leth ar leth, oir ata mesaracht nimhe ac oileamain na crici sin tar cach. Et ocht nuaire deg an la as faidi sa crith sin ⁊ se nuaire an la as girra.

* * *

Do na hinadaibh a na fuil an bliadain uile na hen la ⁊ na hen aithe.

37. DUO IN TERRA LOCA ESSE NOVIMUS, ETCETERA.

.i. Da inadh ar aithnit duin ar talmain .i. inadh acu, is in line direach fa Pol Airtic, an dara hinadh is in line direc fa Pol Intairtic a na fuil an bliadain uili na hen la ⁊ na hen aithi oir atait se mhi na hen la ⁊ se mhi eli na hen aithi. Et gibe neach dabeth a nderedh tuaiscirt na talman annsan inad a mbet Pol Airtic .i. ludrac tuaiscirt na firmaminti annsa line direach os a cinn, dacithfedh se cercall an line diridh ata a cosmulas re cercall na comartadh na timceall ⁊ dacithfedh amlaid sin gluasacht na firmaminti mar gluasacht bron. Agus mar sin, an trat teit grian annsa line direach annsa ced cuit dAirgeis eirghidh si thoir fo talmain don inadh sin adubrumar ⁊ doni la do ⁊ tic na timceall mar broin ⁊ impoidh o oirrcer co deiscert ⁊ o deiscert co hiarthar ⁊ o iartar co tuaiscert ⁊ o tuaiscert aris co hoircear, ⁊ bith mar sin ac sirsibal timcill a

nen ceime no co teit co Cainnser ⁊ as annsin bis annsa ceim sin as airdi a fedann si dul as cinn an inaidh sin ⁊ roinnidh si an la fada sin a nda chuit comtroma ⁊ bith as sin ag isliugad tar eis a ceili no co teit si a nderedh na hoidche ⁊ boinid annsin a solus don inadh adubrumar ⁊ bith la mar sin annsan inadh sin o medon mhis Marta co medon mis Seiptimpir.

Et an trat teit grian a ced ponc Libra, tinnscnaidh an aiche an tinad cedna do dhorcugad ⁊ bith an grian annsin ac sibal fa cuairt mar broin[1] ag isliugad sis tar eis a ceili fo talmain no co ti annsa ced ponc da Caipricornus ⁊ ni fedann isliugad tairis sin, annsin is medon dan aice moir sin. Et tinnscnaidh an grian eirgi an uair sin suas tar eis a celi as an inadh sin no co ted si annsa ced ponc dAirgeis ⁊ tinnscnaidh la annsin aris annsan inadh adubrumar. Et mar sin bith en aithi fhada annsan inadh sin o medon mi Septimpir co medon Marta.

Et mar sin, gebe neach do beth a ndeiscert na talman annsan inadh a mbeth Pol Antairticc .i. ludrach na firmaminte as a cinn co direach, dacithfedh cercall an line dhirigh ag impodh mar broin as a cinn; ⁊ in trat darachadh an grian sa line direach sa ced ponc da Libra, deireochadh si thoir fa talmain da neach da beth annsan inadh adubrumar ⁊ da thinnscanadh la do, ⁊ dimpodh timcill mar broin o oirrcear co tuaiscert ⁊ o tuaiscert co hiartar ⁊ o iartar co deiscert ⁊ o deiscert co hoirrcer na firmaminte.

Et mar sin ni fanann ag sir dhul timcill gan dul fai don inad adubrumar no co tet si annsa ced ponc da Caipricornus ⁊ ar mbeth di annsa ponc sin as airdi a fedann dul don inadh sin doni da chuit don la fada sin ⁊ ni fanann ag isliugad tar eis a ceili no co tet sa ponc deighinach do Pisis ⁊ cuirid dered ar in la annsin ⁊ bith an la sin ann o medon Seiptimpir co medhon Marta. Et annsin, an trat tet grian annsa ced ponc dAirgeis, tinnscnaidh an aithi an tinadh sin adubrumar do dorcugad ⁊ bith an grian annsin ac dul timceall ⁊ ac isliugad tar eis a ceili fo talmain no co tet si annsa ced ponc do Cainnsir innus nach fedann si beth nis isli don inadh sin ⁊ as annsin as medon dan aithe mhoir sin. Et ni fanann an grian ag erge aris tar eis a celi no co tet annsa ced ponc da Libra ⁊ tinnscnaidh an la fada cedna aris ⁊ bith an aithe adubrumar ann o medon Marta co medon Seiptimpir.

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Do na gaethaib, cred iat ⁊ casa ticit siat.

38. ASSERUNT ANTIQUI PHILOSOPHI, ETCETERA.

Oir aderaid na feallsamain arsanta co fuil Eurus te tirim ⁊ Zephurus te fliuch ⁊ co fuil Boreas fuar tirim ⁊ Auster fuar fliuch. Et aderaid blod do na dochturib nach mar sin ata Xepherus na Auster ach gorab fuar fliuch ata Xepherus ⁊ gor ab te fliuch Auster. Agus ni fedarsa an do naduir choitcinn na ngaeth na an da naduir na ngaeth a cricaib airithe adubradar sin, oir daciamaid examlacht na ngaeth a natarrach na crit oir ata Eurus, ⁊ Stepterus fliuch a cricaib ann ⁊ tirim it cricaib ele, gidhedh inneosadsa naduir choitceann deimin na ngaeth uile.

[1] This second use of the quern simile is not in the Marsh ms.

Oir an taer, ar na tegadh on grein, medaigter 7 letnaigter e 7 ataidh se 7 eirgid ceo dub dorcha as in fhairgi suas isin aer 7 doni nel de tuas 7 an trat boineas an ceo sin risin aer fuau tuas cumgigter co prap asteac e 7 dabeir sin air siled 7 leagad 7 fertain da denamh dhe. An trat ceana tecmas an ceo sin na fairgi thuas ar in aer te tirim fein 7 an taer a na celi 7 tocar suas iat let ar let co hinadh an roigh no co flaitimnas an fuachta, cumhgaidter annsin iat 7 bit annsin aer. Is i naduir an aeir the 7 naduir an inaid fuair a contraracht ar a cele 7 ni fuilngid beth a nen inadh 7 is uime sin telgidh an tinadh an taer as 7 bith ga teilgin 7 ag rith o inadh co hinad a gluasacht an aeir 7 as e an gluasacht sin an aeir an gaeth, 7 gach med bis an tadbur as a tic an gluasacht as moidi an gaeth. Adhbur ele as a tic an gaeth .i. an tan bis cath no troid ga tobairt ga imad na sluadh 7 ag imad na narm na ngluasacht, 7 seitfedhac na ndaine, 7 cuit acu ac tethedh 7 an cuit eli ga leanmain, rithid an taer seimh rompa 7 togaidh se gaeth.

Et mas ail let an ni sin adubrumar ar togail na gaithi is an aer fuar tar eis a teidhti da derbadh co follus, gab baisin cugad 7 cuir uisci an a mbed da orlac no tri ar doimhne 7 cuir soitec folamh gloine ann 7 lig doib mar sin fedh na haithi co maidin a ninadh fuar egin 7 dagebair mocrac an soiteac sin lan daer calcaithi fuar 7 impodh a bel fai san uisci sin ata sa baisin 7 cuir iat le celi an inadh egin re teas na greine tar eis eirghi dhi, 7 in trat teidhfis an taer tiudh sin annsa gloine, fasaidh 7 attaidh 7 lethnaidh, 7 bidh ag iarraidh inaidh is mo 7 o nac fuil aigi inadh a rachad ach tri bel an tsoithidh sis annsan uisci, teit fan uisci sin sis 7 togaid e suas co bel an baisin. Et daciter e mar sin mar lan mara ag fas tar eis a ceili no co ndoirte e uair ann tar in mbaisin amach. Et as e sin foillsighes co fasann 7 co natann an taer da bi sa soiteac adubrumar. Et lig do mar sin aris no co ti an aithi ar cinn 7 mar imeocas tes an lae 7 ticfas fuacht na haithi cruinneochaidh an fuacht sin an taer da bhi sa soitec cedna a na soitec fein aris 7 calcochaidh e annsin 7 tuitfidh an tuisci sin na inad fein aris.

Ma sedh o dani an becan aeir sin an fas mor sin, as derb gorab mor an fas doni an taer uile no cuit de na speir fein.

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Do na nelaibh, don toirnidh 7 don fertain 7 do na soidnenaibh.

39. SOL MARIA ET FLUMINA TERRA USQUE LOCA, ETCETERA.

Togaid an grian as an fairgi 7 as na srotaibh 7 as na hinadaibh fliucha eli dethaidhi 7 ceo nach fedtar dfaicsin tre na seimhe, acht mocrac no tratnona 7 an trat tocar suas iat annsan aer the scailter 7 lethnaidter 7 cumuscter iat ar fud an aeir sin oir as inann naduir doibh. An trat ceana tocar suas annsan aer fuar iat, dluthaiter 7 cumgigter asteac na celi iat 7 doni nel dib 7 mar as naduir do na netib cosmaile a ceili dinnsaighe, mar tiadaid na srota isin fairgi, tiagaid na neil as lugha acu sin, oir is edroma iad 7 is usa leo gluasacht dinnsaige na nel is mo, 7 doni en motar mor dorcha dibh 7 bith ainsein tre naduir te da beth aigi 7 in taer fuar na timcill a contraracht 7 ag imrascail re ceili.

Et an trat as treise don air 7 claides an nel ceanglaid 7 calcaidh a buird don taib amuith 7 doni sneachta dhe. Et mar isn an trat bis an teasbach astigh annsa nel ar na

timcullad amuith ag an fuacht ⁊ a nel ar sicc ⁊ ar cruadugad na thimcill, [da] siredh da rer a nadur [a], inad ina fasfadh ⁊ ana natfadh ⁊ an lethnocadh ⁊ o nac liginn a nel daingin do an toibriugad sin da deanamh crothaid e co cumhachtach ⁊ brisid ⁊ teid fodhair mor aduatmar as an mbrisidh sin re nabarthar toirrnec ⁊ le treisi na brigi le ndentar an bisidh sin teit soidhnein ⁊ teinntec as in mbrisid sin ⁊ tuitidh as in mbrisidh sin minrainn beca an neil sin ar mbrisidh ⁊ ac bualad fa ceile. Ac teacht anuas minbrisid fein a ceili aris ⁊ mar roitid an chuit is foicsi don talmain don aer bainid teas an inaidh sin a cnapain corra dib ⁊ doni cruinn iat ⁊ titidh na clocha sneachta ⁊ is iat na minbainnedha beca ferthana bis trit an sneachta an chuid sin bointer de ar leaghadh.

Agus gac med bis an teas sin adubrumar ⁊ in fuacht as moidi an contraracht bis atorra ⁊ mar medaidter an contraracht medaigter an toirnec ⁊ an teinntec tic uadha. Et an cuit nach tic don nel sin cum talman lethnaigi se ar fud an aeir ⁊ doni teinnteach dhe. Et an cuit don teinntidh tic chum na talman scoiltidh si cnuic ⁊ sleibti ⁊ tollaidh an talam ⁊ marbaidh daine ⁊ ellach.

Agus da derbad gorab on contrarach adubrumar tic an toirneac da cuiridar na feallsamain a eisimplair air sin, on an trat curtar duilleog glas ar teinid, suil loiscter i ar mbuain an tesa re, brister hi maille re fogar. Et mar sin an trat curtar iarann derg a nuisci, bainid contraracht an da ni sin fodhar lan mor astu. Ma sedh o dani contraracht na corp mbec an fodar so, is mor an fodar is coir do na corpaib mora da denamh.

Et is lia toirneac ⁊ teinnteach ⁊ soighnein isin earrach ⁊ isin fogmar na is na haimseraib ele oir as idir an samrad te ⁊ an geimredh fuar atait an da aimsir sin. Et na neil togas seididh na gaeithe don talmain suas is in aer ata fuar fliuch cael seimh gan teas gan tirmaigeacht ach an med bis is [na] nelaib sin fein, ni fuil contraracht acu.

Et dealaid an chuit trom bhis is na nelaib sin reodh na mbainnedhaib ⁊ do ni fertain de. Et an trat teagmhas an nel sin ar in aer te, tanaidh se e ⁊ doni aer dhe aris ⁊ tre asaenta contrarachta teasa ⁊ fuachta, tirme ⁊ fliche an aeir sin doni nel mora duba dhe ⁊ doni fertain mor do na nelaib sin ⁊ duairib ann doni bainneda mora fertana ⁊ cloit sneachta reamra don adbur cedna ⁊ is annsan earrac ⁊ annsa fodhmar as minca bid siat; ⁊ an trat bit isin tamrad, tri mhed na contrarachta sin adobrumar da beth isin aimsir sin tar na haimseraib ele, as ann is mo an doininn. Et an trat teagmas gaeth mor re linn na doninne sin ann, casaidh si na neoil a na celi tuas is in aer ⁊ ceanglaidh iat ⁊ cuiridh cumtha examhla orra ⁊ sailid na haineolaidh gorab dreagana iat ⁊ dacimaid an casad cedna ag a thobairt ag an ghaith ar luaitridh na talman.

Agus gidh a nen taib doniter an toirneach ⁊ an teinnteach as tusca daciter an teinntec na cluinter an toirneach. Agus as i cuis dabeir sin, oir daci an radharc ar en tslighe an raed ata a fogas do ⁊ an raed ata a fad uadha, mar nach tusca daci se an talam na na reltanna is faidi uadha a firmamint. Et ni mar sin don esteacht, oir is tusca dacluin an fogar as foicsi do nan fogar as faidi uadha, ⁊ da cur sin a ceill do tsamladar na doctuire cedfaidh an eisteachta re broin, oir da mbeith cluas a poll na bron da cluinfed gan deitfir gach ni do bedh a fad uaithi a fogus di, oir is amlaid ata cedfaid na cluaisi na haer noch ata na corp chael tseim tsogluaisti ⁊ is mo ⁊ is seime ⁊ is luaithi a gluasacht na gluasacht an uisci.

Et an trat donit brisead egin no bunlad no fodhar ele is in aer, an taer as foicse don fodhar sin, gluaisidh se an fodar uadha dinnsaighe na codac ele don aer ⁊ mar sin tar eis a ceile idir randaib in aeir no co tet an fodhar fa deoigh annsa cluais ⁊ on cluais conuic an inchinn noch brethnaiges idir an fogar is mo ⁊ in fodar is luga ⁊ idir an fodhar as seime ⁊ an fodar as reimhe.

Et da tsamladar ar in nos cedna cedfaidh na sul re stoc noch ga fuil ceann cumhan ⁊ gac fad teit amach on ceann sin as fairsingiugad doni ⁊ is mar sin teit radarc na sul tri fedan fethach on incind cu mic imrisan na sul ⁊ bit ceann cumang eige annsin mar bis ag an stoc ⁊ bith a sirletnugad amac no co ngabann an fidair fecas ris ⁊ impoid asteach aris ⁊ beirid leis cruth ⁊ cuma ⁊ dath an raeda sin chum na hincinne.

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Do na hainminntib fastacha nemcedfadaca.

40. UNIVERSA ANIMATA INSENSIBILIA, ETCETERA.

Gach uili ni neimcedfadach ag a fuil anim, fedaidh se fas uada fein, oir dacimaid is na coilltibh ⁊ is na cnocaib moran da chinelaib crann ar a fasann toradh uatha fein ⁊ gidedh as cruinne ⁊ as fearr oilter toiraid na crann cuirid lamha daine na iat. Agus ni fhed crann is in doman fas ach na inad ⁊ na aer nadurtha fein. Agus as e sil na nethead neimhcedfedach ag a fuil anim fastach as cruth adburtha doib, oir dob ail le Dia darinne iat brig silta da beth innta as a fasfadh a gne comhtrom comhcosmail fein tar eis a ceili co brach; ⁊ mar sin an trat tuites an sil sin asin talmain attaid se o fliche na feartana ac tuitim air.

As e naduir an usci dul asteach is gac en corp a negmais cuirp daingin ⁊ bith an grian, ar tedhadh an tsil sin, ac tarraing a uisceamlachta as, oir as i naduir na greine gac uili uisceamlacht do tharraing suas ⁊ fasaidh annsin as in gran, ar na tedadh ⁊ ar na fliuchad, an geineamhain nadurtha da bhi a cumhachtaib folaidh don taib astid ann .i. adbur planda, comcosmail ris in planda o tainic fein roimhe ⁊ bit an talam a sir tobairt fluicha do a ninad na fluicha beires an grian uadha ⁊ fasaidh annsin brig annsin on da ni sin re nabar ainim fastac ⁊ fasaidh cuislenna as sis re nabar precmha in a tairriginn se oileamain na talman chuigi. Et an trat tairrnges an grian na fliuchadain cedna, tairrngid le an brig folaidteach ⁊ crutaidter di gega ⁊ duilleabar ⁊ blath ⁊ toradh ⁊ bid a sir fhas mar sin no co scarinn dfas ⁊ an toradh bhis air as as sil ⁊ is adbur da letheid sin da plannda aris.

Tri gneithe ata do no nethib fasas .i. cuid dib da tet a nduilleabar sa geimread ⁊ tic orra aris is in tsamradh. An dara gne na teit a nduilleabar sa geimirid dib na sa tsamradh. Et tres gne teit as gus an en raed sa geimread ⁊ fasaid as a sil sin a letheid fein isin tsamrad.

Et adeir ardmaigister na feallsaman .i. Aristoteles, gorab tri gneithe ata ar na nethib fastacha nemcedfadacha .i. . . . . .

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