

XX. *Communicated by T. W. Wrighte, M. A. Secretary.  
From the Papers bequeathed to the Society of Antiqua-  
ries of London. By the late John Thorpe, Esq.  
M. A. and F. S. A.*

Read Nov. 15, 22, 29, and Dec. 6, 1794.

[a] A briefe discourse declaringe how<sup>r</sup>  
honorable and profitable to youre most  
excellēt maiestie, and howe necessary  
and comodious for your realme, the  
making of Douer Haven shalbe,  
and in what forte, w<sup>t</sup>  
least charge in  
greateste per-  
fection, the  
same maye be accom-  
plyshed.

**T**HERE is not one thinge, moste renowned foueraigne,  
of greater necessitie (to maynteyne the honor and safetie  
of this your ma<sup>ty</sup> realme), then by all convenient means to en-

[a] This "briefe discourse," addrest to her most excellent majesty queen Elizabeth, was written, probably about the year 1582, by that most excellent mathematician of his time, and skilful engineer, "Thomas Digges, Esquire, sonne and  
" heyre of Leonard Digges, of Wotton, in the county of Kent, Esquire, and of  
" Bridget his wife, daughter to Thomas Wilford, Esquire, which Thomas de-  
" ceased the 24th day of August, Ann. Dom. 1595." Stowe's Survey of London, ed. 1720, E. iii. vol. I. p. 71, 72. For a more particular account of the life of this eminent person, see Wood's Athen. and the Biograph. Britannica.

crease

crease Navigation, Shipping and Maryners. These beyng a strength in tyme of warre, and in tyme of peace, members moſte profitable and com̄odious. But theſe can nether be had, increaſed, nor maynteyned, if firſt ſure harboroughes be not provided as ſafe Receptacles to receiue and garde them from ſtormes, enemyes, &c.

This hath moved that induſtryous nation of the lowe Countries in Holland, Zealand, and Flaunders [*b*], where, by reaſon of there ſandy coaſt, though God hadd ſcarcely in anye place allowed them eny good havens naturall, yet feynge the neceſſitie and com̄oditie of harboroughes have, without regard of eny charges or travell, with infinite expences, made many havens artificiall, even in ſuche places as nature almoſte denied them all hope of helpe. Whereby wee ſee they have drawne ſuche entercorſe and trafique both of forreyn nations for marchundize, and alſo by there induſtrye for fyſhing, that in fewe years, even almoſte in our adge, thay have byn able to build a number of moſte ſumptuouſe, riche, and bewtyfull citties, furnyſhed there coaſtes with great number of Shippes and Maryners, and were become the moſte populous and ritche natyon that the ſoon did ſhine upon. And not only the ſeacoaſte, butt alſoe the inlandes and contreys, by quicke vente of there com̄odities, doe participate of the ſame benefite and fælicitie. And ſuche there charges on havens and harboroughes beſtowed, doe yeeld them the fruyte of ritches, welth, and com̄oditie, moſte plentifullye throughout ther hole domynions. But contrarywyſe with us this laſte parlyament, lamentable relation hath byn made of

[*b*] “ When Queen Elizabeth ſent ſome of her forces to the aſſiſtance of the  
 “ oppreſſed inhabitants of the Netherlands, Mr. Digges was appointed Maſter-  
 “ maſter-general of them, whereby he had an opportunity of becoming perfectly  
 “ ſkilled in military affairs, &c.” Biograph. Brit.



the greate decaye of maryners and fishermen, to the nomt of manye hundred failes upon our coastes of England, even in this adge, and within memorie. And allso of the presente poverty, and desolate habitacon of manye fruntier townes.

Wherby y<sup>r</sup> plainly appearith, thát as y<sup>e</sup> exceffive expences of the Lowe Countreis bestowed in havens, hathe not ym-poucrished, but cleane contrary greatly enriched them with incomperable wealth and treasure, with number of riche, faire, and populous townes. Soe our sparinge myndes, or rather greedy gettinge, gayninge, and encroching land from your ma<sup>ty</sup> havens, and navigable chanells hath utterly destroyed and spoiled manye good havens by nature lefte us : and thereby wrought very beggery, myfery and desolation in these your fruntier townes.

And yf wee seache the very cause of y<sup>e</sup> flourishing estate of London, which allmoste alone in quantitye, people, and wealth in this adge and Realme, ys so encreased : And contrarywyle of y<sup>e</sup> pouerty or rather beggerye and decaye of Wynchelsey, Rye, Roomney, Hide, Douer, and manye other pore townes, wee shall fynde the decaye of those havens, and preferuacon of the Temes, the onlye or chieffe occasyon.

Hereby sufficiently appearith how incomperable juells havens and sure harboroughes are, for the gayninge, maynteyninge, and encreasinge people, wealth, and comodity in anye Realme. And noe lesse strengthe and securitie doe they bringe in tyme of warre, as well by the multitude of maryners (a moste feruyceable people) and shippinge which they breede, as allso by inhabitacon of the Fruntyers.

But in the whole circuyte of this youre ma<sup>ty</sup> famouse Ilande, there is not enye one, ether in respecte of securitie and defence, or of trafique and entercourse more conveniente, needefull, or rather of necessitie to be regarded then this of Douer, scituate  
upon

upon a Promontorye, nexte fruntinge a puyssante forreyn kinge, and in the verye straichte passadge and entercourse of allmoſte all the Shippinge of Christendom.

And yf that our renowned kinge, your ma<sup>ts</sup> father, of famous memorye Henrye 8th, in his tyme founde howe necessary yt was to make a haven at Douer, (when Sandwich, Rye, Camber, and others were good havens, and Calles allſoe then in his poſſeſſyon) and yet ſpared not to beſtowe of his owne treasure ſo great a maſſe in buildinge of that Peere[c], which then ſeemed a probable meane to performe the ſame, howe muche more is the ſame nowe needefull or rather of neceſſitie, thoſe good havens being extreemely decaied and noe ſafe harborough lefte in all the coaſte allmoſte betwene Portefmouth and Yermowthe; ſeynge the ſame allſo may be performed without expence of your ma<sup>te</sup> pryvate treasure; The preſente guyfte of the parlyam<sup>t</sup> conſidered, and there ready willes ſo plainly diſcouered to ſupply whatſoeuer charge ſhalbe needefull: whenſoeuer by your gratiouſe providence thay ſhall ſee the Realmé armed with ſuche a ſhield, and endowed with ſo greate a juell.

*The Commodities that therby bothe to your  
maieſtie and Realme ſhall enſue.*

Fyrſte a place of refuge and ſavegard to all marchantes your ma<sup>ts</sup> Subiectes paſſing from London, and all other the Eaſt and N. Eaſte partes of England, to Fraunce, Spayne, Barbary, Levante, the Ilandes or other parts South or Weſte of the world; for wante of harboroughe at Douer, either goinge furth, or returninge, ſhalbe enforced to ride yt

“[c] King Henry VIII. expended 65000l. upon a pier to reſtore the haven, but in vain.” Historical Description of a ſecond antient Picture in Windſor Caſtle, by John Topham Eſq. F. R. S. F. S. A. Lambarde’s Perambulation of Kent, p. 147, Camden’s Britannia, ed. 1789. vol. I. p. 120. Harris’s Hiſt. Kent, p. 103.



out in open Rodes to the<sup>r</sup> greate perrill : or in tyme of warres for want of fuche succo<sup>r</sup> to throwe themselves on the contrary coaste into the armes of there enemyes.

For all other strangers your ma<sup>ty</sup>s friends that passe the Seas from Hamborough, Danfke, Lubicke, Emden, Scotland, Denmarke, or anye partes of the Lowe 'Contries to eny partes of the world South and S. Weste, whercof there are dailie greate numbers; or of Spayne, Portugall, Fraunce, or Italy, bounde Northwarde, ether to London, or to enye of these Northren provinces, bothe passing and repassing they must of necessitye touch as it were upon this Promontorye, and upon enye chandge of wynde, or feare of enemy for a sure refuge, will moste willinglye and thankfully ymbrace so sweete and safe a Centuarye.

Noe Promontorye, towne or haven of Christendom ys so placed by nature and scituacion, bothe to gratyfie freindes, and annoye Enemyes, as this your ma<sup>ty</sup>s towne of Dover.

Noe place or towne of Christendom soe fetled to receave and deliver intelligens for all mres and actions in Europe from tyme to tyme.

Noe towne of all the Lowe Contreis, (although by there industrie they have manye excessive populouse, faire and riche) by nature so fetled ether to allure entercourse by sea, or to trayne inhabitants by lande, to make it great, fayre, riche, and populouse.

For alluringe entercourse by sea there is sufficient sayd allreadye.

By lande yt hath a better ayre and water, twoe chief elements, then all the ritch townes in Holland and Zealande.

For fier, the contrèy rounde about farr better woodded then thers, and the whole sheere wherin yt standeth, and round about y<sup>e</sup> very Town it self so well sorted for errable and  
pasture

pasture of all sortes, for marſhe and medowe ſo well furniſhed as harte of man canot wiſh or deſier yt better.

A Quarrie of ſtoane at hand, ſufficiente to build both towne and haven, in moſte ſufficient, large, and bewtyfull maner: There wanteth nothing by lande, ſea, or ayer, yt can be wiſhed. And if thoſe induſtrious people of the Lowe Countreis had, in all the provinces, ſutche a Seate, with like commodities, they would make it a Spectacle to the whole world, without reſpecte of charges whatſoeuer.

There wanteth nothinge but an Harboroughe, which made, all other partes of peoplinge, wealth and ſtrengthe, will followe of itſelf.

There wilbe ſhortly after ſuch encrease of Nauigation, as wee ſhalbe able to take for our owne hearrings yeerly, thoſe millions which y<sup>e</sup> Flemynge by our ſlouth, have for manye yeares wholye converted to themſelves, as appearith by *Guicciardyne*, that fiſhing onelye beinge none of the leaſte foundations of all there prowde townes.

A mervelouſe number of our poore people, both by theſe woorkes, till the haven bee made, and afterwards by the ſhippinge, fyſhing &c. wilbe ymployed, who nowe for wante of worke are whipped, marked, and hanged.

The quicke utterance of commodities, which allwayes foloweth by encrease of entercourſe, will cauſe all the coaſte and ſheere to bee notably manured, and peopled, not withe poore idle, but withe paynefull induſtryous rich pſonns: a greate ornamente and commodity in peace, and ſure defence in warre, the ſame beinge the frontier neareſte coaſte.

The encrease of navigation, fiſhing, and trafique, that heereby will growe, and the great wealth and commodity hereof aryſinge, will not be conteyned within one ſheere alone, but powred furth into all partes of this Realme, to the greate



reliefe of the poore, and contentacion of all degrees, encreasing of artes and occupacons; a pattern wherof wee may behould even in our nexte neighbours the Lowe Countreys, not fained in ymagination, but actuallye by them put in execution: And greate shame it were for us to dispaire attayninge that which wee see others, our neighbours, have atchieued before us.

As the whole Realme ingenerall, for youre maiesty allsoe in respecte of youre perticuler revenues shall reape greate profyte by encrease of subsidies, which allwayes will growe greater, together with the wealth of the lande, besides the increase of customes, and futch other revenues as shalbe made of the soile there gayned from the seas.

The sheere of Kent beinge within fewe yeres growen meruelouse industryous in tillinge and manuringe there groundes, when they shall see so convenient a Porte to vent there superfluous comodities, will not only encrease in wealth and people, but allso yeld unto your ma<sup>t</sup> coffers for transportation of there excesse in wheate, barley, and beere, greate encrease of revenues: and all other sheers taking example by them, will likewyse growe in labour, industry, wealth, and people.

There can noe pitche, tarre, mastes, cables, or other tackle for shippinge, passe from Danske, Denmarke, or other Northern partes to Fraunce, Spayne, or Italie, but your ma<sup>tie</sup> havinge a stronge haade of shippinge at Dover, maye command, for money, the choice thereof before eny kinge in Christendom, in tyme of peace, and in tyme of warre therby allso disable enemies, and contente freinds; besides y<sup>e</sup> infinite comoditie that may happely growe, both to the whole Realme in generall, and to your maiesties coffers allsoe, by a Staple, that in tyme, with good policie, may bee erected there, to serve both Southe and North contries w<sup>t</sup> there mutuall comodities.

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In tyme of warres howe dangerouse attemptes maye be made with smale frigotts by fyer, or otherwife, to endanger your maiesties Nauye, where nowe yt lieth with hope sufficiente to escape and returne againe before enye shippinge can be made out of the Tēmes to reskue or revendge, the expertest souldiers and seamen beste knowe (*d*). But this harborough beinge made and furnyshed w<sup>t</sup> good shippinge, as allwayes yt wilbe, noe futch attempts will ever be made: the enemye beinge assured, howsoever the wynd blowe, upon enye alarme ether from London or Dover to be surprized, and noe hope left to escape.

Your ma<sup>ty</sup> havinge shippinge at Douer, may allsoe upon all sodaines with lesse charge sett furth to skowre the sea of pyrates, wherby your navy of marchants will mervelously encrease and florish, both to the greate strength and wealth of the Realme, and to the great encrease of your ma<sup>ty</sup>s customes.

In like sorte our fishinge navies may be maynteyned and protected, as well from pillferinge pyrates, as other violence of strangers, and therby reape the benefite of your seas, whereby our strength by sea will mervelously encrease, and great numbers of poore people ymployed, as well on land, in knitting nettes, making and mendinge both shipps and tackle, as allsoe in gettinge of fyfhe, a foode greatlye to releue the

(*d*) Thomas Digges is said to have written “England’s Defence: a Treatise concerning Invasion; or a Brief Discourse of what orders were best for repulsing of foreign Enemies, if at any Time they should invade us by Sea, in Kent, or elsewhere,” in 1599, (there must be a mistake in this date, as he died in 1595, it was written probably in 1590): but not published till 1686. London, fol. in five sheets. There was a tract of the same nature published at the end of his *Stratoticos*, edit. 1590, intituled, “A Briefe Discourse what Orders were best for repulsing of foraine Forces, if at any Time they should invade us by Sea, in Kent, or elsewhere.” It contains only five leaves in 4to.—*Biograph. Brit.*



pouertie of the Realme, and exceſſiueſly to encrease your ma<sup>ty</sup> revenues, by cuſtomes of futch comodities as ſhall abundantly bee broughte in for exchange of thoſe our fiſhe.

The fiſhing navies beinge by this meanes bothe protected and greatly encreaſed: all lawes for poonyſhment and taxes for releevyng idle and pore people will then ceaſe, for there ſhall be noe perſon for age or ſicknes almoſte ſo ympotent, but ſhall fynde heereby ſome trade wherby to get ther Lyvinge, as by example of the Lowe Contreis wee may plaine-lye behoulde.

What greater honor to your ma<sup>ty</sup> then like as yo<sup>v</sup> are (in righte of inheritance), Ladye of the narrow ſeas, ſoe to bee able in deede to maintayne y<sup>t</sup> feyniorye, and to put the ſame in exequution at all tymes, as farre furthe as your highnes ſhall fynde convenient.

What greater honor to your maieſtie then to bee the founder of ſo notable a Monumente, lyinge in the eie of almoſte all the ſhippinge of Europe. A thinge your ma<sup>ty</sup> father aſpired at w<sup>t</sup> expence of ſoe greate a maſſe of his owne treaſure.

What greater honor then to be able in tyme of peace and warre to proteſte freinds, and offend enemyes more then enye other Prynce of Europe.

Seinge then it hath pleaſed God to leave unto y<sup>s</sup> Realme futch a ſcituation for a porte towne, as all Chriſtendom hathe not the like, and endowed the ſame withe all comodities by Land and Sca, that can be wyſhed to make the harboroughe, allure entercourſe, and mayntayne inhabitants. And that the ſame once performed (in all probable diſcourſe of reaſon) ſhall bringe futch heapes of comodities, not only for increaſe of your maieſtis particular revenues, but alſo of wellfare and riches to the whole Realme in generall. The ſame alſo  
beinge

beinge a thinge so needfull, or rather of necessitie, aswell for succoringe and protecting friends as annoyinge and offending enemyes, both in warre and peace. And that it hath pleased God in his providence to referue the same as an ornament of yor tyme, to be nowe performed by your maiestie, and leaft as a moſte honorable Monument of your happy raigne to all poſteritie.

Mee thinkes, there remayneth no other deliberacon in this caſe, but howe moſt ſufficiently and with greateſt perfection poſſible, moſt ſpeedelye the ſame may bee accompliſhed.

And in diſcharge of ſome parte of my bounden duety to y<sup>e</sup> advancement of your maieſty<sup>ts</sup> ſervice, having not only heard, by examynacon of the auncient and moſt ſkilfull maryners and inhabitants of Dover, the true eſtate of all alterations that have happened there theſe forty yeres; but alſo my ſelf ſeene and founded all the chanells, ſhelues, and rodes there, and ſett them down exactly in platte, having alſo conferred the ſondry opynions both of ſtrangers, and alſo of our owne nation, for the repayringe or newe makinge a perſitt haven there, and comparing the ſame w<sup>t</sup> that myſelf haue ſeene put in execucon in ſondry places of the Lowe Countreis, for making havens artyficiall, I haue in the end reſolued vpon one form of platte, which of all other, (aswell for the uſe and comodytie when yt is finiſhed, as for the poſſibilitie, or rather facilitie in makinge, for the probabilitye or rather aſſured certaintye of contynuaunce, for avoydinge greate waſt of timber, and ſavinge a greate maſſe of treaſure,) I finde and judge of moſte perfeccōn. And albeyt the Flemiſhe platte, in former conference of comanyſſioners, was adiudged of all other then offered the moſte probable (*e*): yet vpon due conſideration

“ (*e*) See the petition of the mayor, jurates, and commonalty of Dover, preſented to the Lords of the Council, ſtating the importance of the harbour of Dover,”  
 &c.



deration this platt, I presume, will appeare in all respects more comodiouse, more fæcible, more assured to contynue: farre lesse coast in maintenance, and at leaste five thousand poundes lesse charge in makinge, as by thes articles of explanation and charge ensuyng more evidentlye maye appeare. The which I humbly presente to yo<sup>r</sup> maiestys gratiouse consideraçon, as a matter of greate moment, both in peace and warre, for your highnes seruyce, for the greate comfort of all the Navie of yo<sup>r</sup> Realme, and a Monumente moste honorable, and none of the leaste to all posteritie of your ma<sup>ty</sup> moste prosperous, gratiouse, and happye raigne.

*The Commodities of the English Platte, presented by Thomas Digges, compared withe the Flemmyshe.*

INPRIMIS, it is not haulf the charge of the Flemysh platte, by reason of the chargeable foundaçons allredy laied by K. Henrie the 8<sup>th</sup> w<sup>ch</sup> are ymployed to serue this platte (f).

Besides the invention of a newe Baye, to bee made of beach, oaze, and chaulke, wherby infinite waste of tymber, and endlesse charge of reparations ys allsoe avoyded.

II. It is more probable and assured aswell in respecte of the backwater, which is farr greater, as of the scituaçon of the Sluce, which is farre nearer to the haven mouthe, besides a waulle to guyde y<sup>r</sup> water w<sup>ch</sup> in the Flemyshe ys omytted.

III. It is more comodyouse, as well in respecte of the vse of that goodlye greate baye before the towne and castle, w<sup>ch</sup>

&c. &c. preserve<sup>d</sup> by Mr. Topham, in his "Historical Description of a Second Picture at Windsor Castle," p. 14.

(f) See "Plat of the Town and Harbour of Dover, temp. Queen Elizabeth," published with "A Description of an Antient Picture in Windsor Castle," &c. by John Topham, Esq. F. R. S. F. S. A.

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in the Flemmyſhe platte is quyte loſte, as of the fludgates, wherby veſſells may paſſe to the very towne, and ſhippes ride in water continually, that by the Flemmyſhe everye tyde lye on bare grounde.

IV. It is more affured, and leſſe perrilouſe, in reſpecte of convenient acceſſe for ſhipping at all tymes to reſte in ſafetye fludd and ebbe, w<sup>ch</sup> in the Flemmyſhe platte is farre otherwiſe.

V. The harboroughe leſſe perrylouſe to enter, and much ſafer within then the Flemmyſhe, as by the platte conferred wilbe manyfeſte.

VI. The charge of maintenance this worke when it is finiſhed, not the quarter of the Flemmyſhe platte.

VII. Noe futch waſte of tymber as in the Flemmyſh platt, a thinge eſpecially to bee regarded.

VIII. There wilbee ſoe much lande at the peere gayned from the ſea, to buylde vpon, as together with that w<sup>ch</sup> your m<sup>ty</sup> already hathe, will yelde for twentie one yeares, or three lyves, to be leaſed, an hundreth pounce rente a yeare, and after will be to the crowne for euer warth a thouſand markes by the yeare at leaſte : beſides all futche revenues as in tyme to come may be made of the longe Baye, and waſte under the caſtle.

IX. The revenues of the head money and haulf paſſage, with haulf the rents aforeſaid, will well ſuffice to mayntayne theſe workes : ſo that the other moitie will growe clerely to the crowne for euer, beſides a mervelouſe increaſe of cuſtome, &c.

X. The ſucceſſe of this platte not prooved by coniecture, but by evidente reaſons grounded vpon plaine experyence there allreadie wrought for thirtie yeares and more

XI. The



XI. The haven, in full perfecōn made, cleared, and strongly fortified, all with one charge, and y<sup>e</sup> whole not to coste so mutche by five thousande poundes, as the Flemmythe platte of a drye harboroughe onlye.

The verity of all thes articles shall evidently appeare by conference of the explanacōn of the platte ensuyngē: with the articles of the trewe estate of Douer haven, and all alterations happened synce the buyldinge and decay of the peere, subscribed by the handes of the moſte auncient, sensible, and skillfull jurates, masters, and maryners of Dover, whiche I have also adioyned because they may serue

as a teste to trye y<sup>e</sup> value of enye  
plattes offered, and to discerne  
probable and feazible,  
from vaine fryvo-  
louse and  
phantaſticall.

*Articles exp laying the English Platt of Dover Haven presented  
by Thomas Digges.*

INPRIMIS, there is converted to the use of this platt, so greate a parte of the peere, and other foundacōns laid by your ma<sup>ty</sup> father kinge Henrye 8th, as would coste at leaste twentie thousand poundes yf thay were nowe to be newe made.

The Northern waul that leadeth from the Sluce to the haven mowthe, and all other workes in this platte of stone or tymber that are to bee newe made, are fetled upon firme foundacōns of rock, and to be wrought vnder the protection of y<sup>e</sup> peere alreadye buylt, whereby thay are shrowed from the radge of the sea, and therby to be framed more easely and assuredly, and w<sup>t</sup> farre lesse chardge.

Likewyse on the other side, yt is protected from the force of the seas w<sup>t</sup> greate shelues and banks of beache, w<sup>ch</sup> with groins of smale charges may be encreased or mynyshed as occasyon shalbe offered.

The longe wauall from the haven mowth towards the towne, hath already, by nature, a foundaçon made of 15 foote highe of beache, with oaze, so incorporate that it retayneth water of ytsel.

By this præcedent alreadye offered by nature, wee meane to raize a bay 8 or 10 foote higher of the like substance: whervnto arte shall adioyne futch foorme and matter as muste of necessity cause mutch greater perfecçon, and therby abundantly suffice to serue the purpose it is ordayned for.

And because experience teachith, that chaulke with oaz doth singularly bynde, and greate clyffes and mountaynes of chaulke therto adioynynge: This Baye shalbe made of those three substances, chaulke, beache, and oaze, which, without charg, God hath there provided and layd in redynesse, which skillfully cowched and interlaced, as by y<sup>e</sup> Modells for that purpose more perticularly maye appeare, cannot but make a Bay farre more sure, and tenfold lesse charge then futch as in the Flemysh platte ys required.

And to the Seawarde this Baye shall allway be defended and garded with a massye banke of beache, w<sup>ch</sup> by the Northern jawe of the haven mouth will allway bee maynteyned, and may with groynes of smale charge at pleasure be encreased in what place wee lyst.

And wheras the excessive waste of pile and plank in the Flemysh platte, to performe so hudge a worke of 5 furlonge in length, wold be futch as yt is doubtfull whether the whole Realme be able to spare tymber to supplie, yt is noe



lesse doubtfull allso after they shall passe y<sup>e</sup> rocky foile, whether they shall euer with any pyling reach so deepe as to make a fure foundation to settle there waulle vpon.

But in this worke the founda<sup>c</sup>on is alreadye settled and rayzed 15 or 16 foote in heighte, within 6 or 7 foote of full sea, and the same alreadye by experience found so firme, as yt retayneth water that standeth 12 or 14 foote in heighte aboue the lowe water marke. And therefore no doubt at all by arte to supply the smale worke remayninge to be fynished.

Heereby shall be avoyded the excessive waste of tymber, w<sup>ch</sup> wold be not only burdenouse and odyous to the whole Realme, but allso moste iniuryouse to your ma<sup>ty</sup>s Navie; and allso to y<sup>e</sup> whole Navie of your ma<sup>ty</sup>s Subiects: a matter moste especially to bee respected.

The mole without is alreadye rayfed by yo<sup>r</sup> ma<sup>ty</sup>s father, with rockes 3 fadome in heighte, ther is noe more to doe, but by the same arte of tunbotes to raise the worke 2 or 3 fadome higher. For performance wherof the rockes alreadye fonken, w<sup>ch</sup> may be wayed up and remoued from betweene the haven and the newe Mole, will almost suffice without farder seeking for them.

The Sowtherne Juttye or bullwarke will allwaye retayne so greate a quantitie of beache betweene the sea and the peere, as the howses there built, and to bee built, will neuer be in eny danger, as by evident experience these 40 yeares, y<sup>t</sup> is most manifest by succeffe of groynes allredy made.

Allso after those 30 rodd of the Peere betwene that juttye and the Mole shalbe cleared, the sea having his free course of ebbe and fludd through the same, cannot by eny meanes permitt any shelves or banckes of beach or sande, to lye before the haven mowthe, for by evident expeyence these 30  
yeares,

yeares, and more yt hath byn approued, that no shelues of beache have euer growne or remayned longer then they have byn shrowded and protected by the peere. Soe that the only doubte is of such beache as may repose it self vnder the Sowerne jawe of the haven mowth, which, by the force of the Master Sluce, shall allway be scowred and remooued.

This master-Slucce, as in the platt may beste bee conceaued, is placed directly againste the haven mowth, not 20 rodd distante from y<sup>e</sup> only place of perrill to bee clenfed, the backwater farre greater then that of the Flemmythe platt, his course firste straightned betweene the jutties to geeue him force, and then, by a wauall directlye guyded and ayded to worke his beste effecte, and so farre more probable, and assured in all respects then the Flemmythe, to clenfe the haven mowthe, wherof there is none that euer sawe the workinge of the Sluces in the Lowe Countreis, or in Newhaven in France, that can make enye doubte.

True it is the abundance of beache is futch that is carried with the fludd, as by noe groynes it is possible to be stayed, and therefore no contending by force with an enemye so puyffante, but wyfely to geeue him place, and free passadge is the only way and then by a stronge backwater to purge and clenfe futch dregges as he shall leave behinde him to annoy the haven mowth. Thus will the fludd carry him Eastward, farder and farder towards Sandwiche, w<sup>ch</sup> hereafter will rest in more perrill of this beache, then ever Dover shall, and muste, in tyme to come, be constrayned by like arte to ayde them selves againste yt.

This is plainely approued by the hudge groynes and black bulwarke buylt by your ma<sup>ty</sup> father to stay the beache, which, neuertheles, after yt had filled all those workes, came about the hed of the peere, howe farre foeuer yt was built, and



vnder y<sup>e</sup> lee and shadowe therof, banked it self into greate shelues, which shelues and bankes of beach never contynued longer then the peere defended them: for so sone as the North-east end of the peere decayed, the sea presently removed those banks of beache, and as the peere decayed more, soe were those bankes of beach, allwayes more worne away, and neuer rested farder furth into the sea then they were protected by the Peere. And at this daye, there is nether bankes of beache nor sande, that lyeth higher or farder out then yt is protected by the rockes or buyldings of the peere. As by the articles of the true estate of the haven, acknowledged by generall consent of the auncient skillfull masters, &c. more plainly may appeare.

A fludgate, or locke, there is allso made in the bight adioyninge to the master-fluce, as in the platt is beste perceaued, the whiche shall serue not only to lett in and out all futch vessels as may passe with marchandize even up to the towne, but allso to penne vp the backwaters to futch height, that shippes may safely ride a flote, fludde and ebbe within.

These kinde of lockes, or fludgates, are vsually in many places of the Lowe Contreis, and shall haue in this place, therto assigned, a firme founda<sup>c</sup>on of chaulkie rocke to settle vpon. The proportion of the fludgates and capestainds to wynde them open, and faste, shall in Modell bee allsoe sett downe.

The Ryver, as by the platte may beste bee conceaued, ys turned from his old course, at the stone bridg by a double fluce, to let him runne ether towards the castle, or towards Paradize, as o<sup>c</sup>casyon shalbe offered: towards Paradice, yt is conueied all alonge the streete vnder the Clyffe, not only to serue all the inhabitants w<sup>t</sup> freishe water, but all so by the second double fluce, called Paradize-fluce, to clense and scowre

at all tymes, both partes of the olde haven, named Paradize ; and allso the chanell of the newer haven, even downe to the mowthe, and will reasonably suffice of it self, to clense the mowthe, and kepe yt open, excepte by some radge of Eastern wynds, the beache growe sodainly to a greate banke. Upon enye futch occasion shall the Master-fluce bee opened, whose violence will be futch aswell in respect of the greate waight of the backwater, as of the depthe of his faull, and of his force, enclosed and guyded to the place, and chiefly by reason of the neerenesse therunto, that it will teare vp and open the passadge, though it were clene closed vp. And soe, no doubt at all of a perpetuall good harboroughe for ever.

The foorme of the master-fluce, and double flucēs, shall allsoe, in modell particularly be described.

The laste and left fluce of all, is that w<sup>ch</sup> resteth in the North-east wall of the backwater nexte the castle, which may bee ether a fluce, or litle locke, to penne vp the water, and lett boates passe to and froe : the vse therof is not only to receaue water sufficient to [deuide the encreased beach, or base towne, from Douer itself, thereby to preferue the chief towne from eny danger of sodaine incurfions, but allso to lett goe at lowe water, to scowre and make a good chanell all-way for shippes to come up to y<sup>e</sup> towne.

The soile woonne and gayned from the sea, wherto your ma<sup>ty</sup> iustly is and shalbe entituled, may be sorted into 200 ground platts at the lest, for dwellinge howses, besides conueniente roomes left for streetes, market place, church, &c. as in the platte is expresse, and euery of those howse plattes, one with another, of suche receyte as, beinge builde, will yelde at lest 20 nobles rente yerely a peece, yf thay were in a towne of farre lesse entercourse then this is sure to bee. And to haue a lease for three lyves, of so mutch soyle for a howse platt, in  
a place



a place of fuche trade to build vpon, thay cannot wante tenants at xs. reñte a yeare, to buyld on there owne charges, which presently wold yelde your ma<sup>tie</sup> 100l. a yeare, and 1000 markes yearly at least, after expiracon of those leases to the crowne for euer. Besides all the newe baye, and that lande that yerelye will encrease more, vnder and beyonde the Castle, able to scituate a newe towne vpon. The same likewyse to yeld you ma<sup>tie</sup> and succeffors a rent by futch as shalbe permitted to dwell thereon.

After this Haven and Mole ys brought to perfeccon, there is noe doubt but the entercorse of all nations will be so greate as your ma<sup>tie</sup> shall haue tenaunts ynowe to inhabite and builde both the newe bay, and allso that waste vnder the castle, which beinge sorted out into convenient streetes, will shortly growe to bee a proper base towne, and yelde a greate revenue to the crowne for euer.

Nowe, that by apparante demonstration (not grounded vpon phantasie or coniecture, but approued by experyence and succeffe for 30 or 40 yeares), I hope it is evidente that these workes beinge performed, the haven and rode will be safe, sure, and comodouse for all shippinge that shall passe this frete or promontorie to repaire unto, wherof the number wilbe so greate, and entercourse so notable, as yt cannot but excessiuely enriche and encrease the inhabitants, yt wilbe allso necessary to consider howe the same may bee fortyfied, and made of strength sufficient to withstand enye sodaine attempte or incurfyon of the enemye. Wherein, if this foorme of Platte deferue enye commendacon in respecte of the haven makinge ; it is cheefly in this, that with one and the same charge the haven is both made and strongly fortyfied, and every juttie, towre, and baye, dothe serue to a double office, both to resiste y<sup>e</sup> violence of the sea, preferue the haven, and  
allso

allso to repell the forreyn enemye, as forcibly as if the workes had byn made to y<sup>t</sup> only purpose, as by the platte and articles enfuyng more playnely shall appeare.

*Of the Fortification.*

THIS baye, or haven of Dover, is on ether side, as well beyond the castle North-east ward, as beneth the greene bullwarke South-westwarde, envyroned with foe hudge, steepe, and highe cliffes, as ther is no possibilitie for the enemye to lande, but ether on the beache against the peere, or towne, or ells to enter the harborough it self. For landinge against the peere, that Southern juttie made to mayntayne the beache, doth allso very aptely supply the office of a platfoorme, or bullwarke, not only with ordynance to beate into the sea, and all the enterance betwene the mole and yt, but allso to flanke Westward all the beache and landinge places there, as conveniently as yf it had byn of purpose made to noe other vse.

Likewyse the Northerne jawe of the haven mowthe beinge chefely made to encrease a backe of beache alonge the newe bay or banke, serueth not lesse fitly for a platforme, to scowre all that beach along downe towards the castle foote, where yt is againe answered with the other platfoorme alreadye restinge at the foote of the clyffe.

And for the haven mowthe it self, besides the platfoormes on the jutties without, there is allsoe within the haven adjoininge to the fluce, a platt foorme planted with ordynance, directlye beatinge the enterance, in futcheforte as yt is vterly ympossible for enye vessell to enter there, yt may not bee bowged by enye one of those three defences ; and yet is there  
allso



allso the stone towre, which not only serueth for the sluice howse, but allso to command those plattformes and defend the master-sluice, and besides all thes defences, there is allso all the ordynance from the castle on the one side, and greene bullwarke on y<sup>e</sup> other, to crossebeate clene ouer all the baye.

The newe buildinge allsoe by the peere, beinge forted, as in the platt is described, besides convenient streetes for 'accesse to all the howses, there is a place of assembly lefte large ynowghe to putt 1000 souldiers in battaill, with convenient passadges to marche towards the curteyns, on the sea, with streetes of capacitie sufficient to receaue souldiers for defence of those curteynes, so that there is nether Antwerpe, Flusshing, nor eny of all there townes in the Lowe Contreis that are reputed strongest, that towards the sea is more forcibly fortified then this shalbee.

Towards the mayne, yt cannot be denyed, but yt is euery way commanded of the hills and cliffes, and therefore, what wealth and pride soeuer y<sup>e</sup> towne shall growe vnto, yt shall neuer be able to stande alone, but allwayes at devocōn of the foueraigne; nether can the forreyne enemy, if by eny treason he should surprise yt euer be able to houlde and keape it againste a kinge of Englande; and yet as sufficiently able to defende it selfe from enye hostile invasyon by sea, as eny towne of Christendom that is reputed moſte stronge and sure.

*A Computation of the  
Charges of Douer Haven, accordinge  
to the English Platte.*

*The Charges of one Rodd square of Waull filled to a foote in heighte.*

*Ensuethe.*

s.    d.

The hewinge of the stone ashlar, and Endstons, with artyficiall bevelinge, and lockbands, one within another, will amounte before they be at the place readye to be layed, 12d. the foot of parement measure ; and soe for the rodde -

16    6

The endstones shalbe 4 foote at lest longe, and therefore requireth a yard and more of fillinge betwene those endstones, which must be doon ether with ragstone or hewen chaulke laied in mortar. Counterfortes allso muste be made 10 or 12 foote in length, and 3 foote brode ; at the foote in every rod one of hewen chaulke, the rest shalbe of oaze, beache, and other rubbish rammed betwene those counterforts.

One barrell of Tarris will serue to laye three rodd, at 5s. the barrell - -

1    8

18 buffhells of lyme, at 2d. the buffhell, will laye one rodd - -

3

18 buffhells of sand, at 1d. the buffhell, will laye one rodd - -

1    6

80 foote ragstone, or hewen chaulke, in eury rod, to lyne the waull, and make y<sup>e</sup> counterforts, at 1d. ob. the foote - -

10

2 workemen, 6 laborers, will substantially worke one rodd square a day to a foote in height, and allso ram in the core : ther wages -

7    0

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H h

Some



	s.	d.
Some of one rodd long, one foote high -	39	8
The foure foote wauall alone without counter- fortes and core, will well be performed the rodd for - - -	20	

*The Longe Wauall.*

This wauall is to bee made by cuttinge a trenche in y<sup>e</sup> mayne bankes of beache, which are allredy so bound with oaze, that they hould water, and by filling that trenche with the mudd and oaze which cloyeth now the haven. The which oaze will in shorte tyme, so combynde all the beache, as no water at all shall be able to drayne out, and that which is throwne vp will raize the fame aboue the highe water marke. It muste be myxed and interlaced with chaulke, and cowched in bevelinge manner, accordinge to fuche patterne and proportion as in modell is sett downe. One rodd of this may well be performed with twoe lighters, of eight men to a lighter, in 5 daies.

There wages will amount to 20 nobles y<sup>e</sup> rodde, which is the whole charge. For the stufte costeth nothinge, and the lighters may allso bestowe, in that tyme, good store of chaulke at the bottome of the bay, to strengthen and bynde the foote therof.

*The Charges of the Baies  
and Jutties, &c.*

The firste juttie or hedd runyng from the haven mowthe Sowth, into the sea, is 36' rodd longe, whereof 30 rodd is of single wauall, beinge

	£.	s.
inge allreadie filled, y <sup>e</sup> whiche, at 20s. the rodd, 30 foote highe, amounteth vnto -	900	
'The other 6 rodd to bee made into the fea withe counterforts, and core at 39s. 8d. the rodd, 32 foote highe is - -	380	16
The end and West side of the fame juttie will hold 9 roddes longe, 32 foote highe, with core and counterforts, at 39s. 8d. the rodde is	571	4
Allso betweene these twoe wālles of a rodd in thickness there will be about 12 rodd solid, to be filled with beache, oaze, rubbish, &c. 3l. y <sup>e</sup> rodd solid a pece, wilbe -	36	
The Sowtherne jawe allso of the haven mowthe to the cheyne, 8 rods longe, 30 foote highe, without core, at 20s. the rodde -	240	
Allso the turnynge to the stayers of single waull, without core, 8 rodd more -	240	
Allso from the stayres 10 rod, w <sup>th</sup> core, at 39s. 8d. the rod, 24 foote highe -	576	
Some of this whole		
Jutties charge is - £2944		
The Northerne jawe and waull to the greate Sluce 28 rod longe, w <sup>t</sup> the turninge end, may be accounted at 30 rodd longe on ether side, and so 60 rod in all, w <sup>t</sup> core and counterforts at 39s. 8d. y <sup>e</sup> rodde, 24 foote highe, amounteth vnto - -	2856	
Allso betwene those waulles, about 40 solid rod, at 3l. the rod of core - -	120	

Some of this Baye £2976

H h 2

The



£. s.

The South baye or landfether of the great sluice, 10 rodd on the one side, and 12 on the other, with y<sup>e</sup> turnynge ende, may be accounted round about 25 rodd, y<sup>e</sup> which 24 foote high, at 39s. 8d. the rodd, amounteth vnto -

1190

Item 20 rod of core solid amounteth vnto

60

Some of this baye £1250.

The embowed bay, wherin the fludgate to lett shippes passe to the towne shall stande, is 17 rodd on ether side, the fludgate 24 foote highe, at 39s. 8d. the rodde -

795 12

The greate Sluce w<sup>t</sup> his storehowse and all engynns therto apperteyninge with your ma<sup>ty</sup>s Statua in y<sup>e</sup> frunt for an honorable monument, that this haven was your ma<sup>ty</sup>s arte, may coste

1000

The fludgates to lett shippes passe to and fro to the towne, with the stone stayers by y<sup>e</sup> haven mowthe - -

400

The dooble sea wauall from the Northern jutty downe to the castle, being made of chalk, oaze, and beach 5 rodd ouer at y<sup>e</sup> base, and narrowinge to the breadth of 4 rod at the toppe, w<sup>th</sup> a coffyn damme in the myddle of 6 foote at the coffyn damme bottome, and ten foote at the toppe, filled with oaze, at 10l. the rodd, being 200 rod in length, will amownt vnto -

2000

The makinge of the dammes to keape out the sea while the woorke is in hande, and a groyne to wyne more beach on the South side, and certaine milles to void the water will coste

2000

The whole charge of  
the haven according

to this platte - £13365 12s.

*Of the Mole.*

The buyldinge of the mole, and clearing of the 30 rodd of the peere, betweene the mole and harborough mowthe ys performed at once, for by tunbotes thofe fonken rockes may both be wayed, and allſo conveyed to the mole better cheape then to feke them farder off,

*The Charges.*

		£.
5 Tunbotes havinge to euery boate 8 men,		
will haue for wages 40s. a day, and theſe,		
in 2 yeares, will verye well raize the mole to		
his perfection. The charge therof amounteth		
vnto	-	1460
150 tunnes and chaines to ferue y <sup>e</sup> botes will		
coſte	-	300
The charges of the Mole	-	£1760.

The turnynge of the Ryuer, and makinge of the other Sluces, may be doonne at leyſure, after the ſtreete downe to the peere is buylte: for then will euery howſe for his owne comoditie in reſpecte of freiſhe water, bee content to beare haufe charge of trenchinge the chanell, where the ryver ſhall roonne, and the fluces will not coſte 500l. the makinge, excepte the townſmen growinge welthy for the bewtye of there towne lyſte to garniſh them with faire ſtone howſes, wherein thay may bee at more or leſſe charge as they lyſte.

*The*



*The order of Proceeding to make  
this haven w<sup>t</sup> leaste charges  
in greatest perfection.*

THE firste degree of all other is to resolute vpon some one certaine platte, without the which no deliberacon can be vsed, nor resolution made, what proportion of stufte is to bee provided, nor what kinde of woorkmen entertayned. And if the platte I haue presented to your ma<sup>tie</sup> be founde in due examynacon more probable and easye to bee performed, more comodious for vse of shipping, lesse perrylous for entrance, more profitable to the towne then the best hitherto presented, and at leaste twenty thousand pounds lesse charge. Then I thinke yt shalbe noe ill advise to resolve on the same. Yf enye better may be offered, I wish the best to be selected. And albeit, by attentyve examynacon of all circumstances, I have fully satisfied myself, yet, in a matter of this ymportance, I will not by eny meanes take vpon mee so greate a burthen as to avowche enye thinge vpon myne owne creditt, but having heere sett downe demonstratively both myne opynion and the reasons that induce me to yt, I humbly crave yt may with others be conferred, the beste chosen, and the same as a platte delivered from your ma<sup>ty</sup> speedely, substantially, and effectually to be putt in exequution. And for the order of proceedinge in y<sup>e</sup> woorke, if this platt shall be chosen, I thoughte meete to adioyne these few notes ensuyng :

In all woorkes, whether thay be greate or smale, there is twoe usual wayes to bargaine for them. The one is called by greate, when ether the whole together, or partes therof severally, for a pryce certaine are concluded, and bargayned for.

The

The other, when woorkemen of all fortes are by daies wages intertayned, and so the woорke sett forward accordinge to the platte.

In the firste way, there neede noe treasurer, comptroller, clearkes, purveyo<sup>rs</sup>, nor other officers, but only a surveyor or overseer, from tyme to tyme, to see the worke substantially and perfittlie performed, according to the platte and patterne agreed vpon.

But in so greate and strange a worke as this, there are none that by greate will ever offer to vndertake the same, but they wilbe sure to demand double so muche as happely may performe it ; and will also, yf they bee not diligently overseene, pynche the worke, and ether for lucre, or feare of losse, make yt so sleightly and insufficiently as maye vtterly spoile the whole.

And this, I thinke, mooued your ma<sup>ty</sup> father rather to choose the second way, wherein his ma<sup>ty</sup> was excessively charged by multitude of officers, which were twentie at leaste, continually in paye.

To avoid therefore both inconveniencs, a meane coorse may be taken, in establisshing only such officers as of necessitie muste contynue, whiche shalbe verie fewe.

And for purveyo<sup>rs</sup> for tymber, cariadges, bayn woорkes, and tunnboord, for wardens of Carpenters, Masons, and Cupers; for Clarkes of Barrmen, Coorts, Masons, and Carpenters, and such other inferiour officers by comyssion thay may be placed and discharged as occasions shall arise in the works to vse or leave them ; and thereby greate soms of money saved that otherwyse shuld be consumed in idle officers. But of this comyssion I leave more particularly to intreate, because yt is allredy drawne in very convenient order.



But to speede forward the weorke, yt were convenient that before the felling season passe away, the commysfioners meete to geue order that there bee provysion made for tymber, as well for pile as planke, which muste in diuerse partes of the woorke bee vsed.

Allso for tunbotes especiall care muste be had of very choice tymber to make the caske boordes, and then muste they bee very well seasoned, for if those toonns leake, and receaue water, thaye are vtterlye ymprofytable. There is litle tymber in Kent to be found for this purpose, excepte in the weald, but in Suffex I thinke will beste prouysion be made.

Then shall yt bee beste of euery kinde of woorke to begynne a rodd or twoe, and that fynished and made substantially, artificially, and in full perfection, to trye who will vndertake beste cheape by greate, according to those patterns, to fynish the reste.

Likewyse aswell for refoormynge yf all that stone y<sup>t</sup> hath byn misshewen by direction of one Treewe, as also for newe makinge of all the rest, y<sup>t</sup> may be proponed to futch as (according to the modell or patterne delivered by the director of the woorkes) shall undertake to square them by the foote of Parement measure, at least price. If enye will take it in hand better cheape then it shall faull out by dayes worke.

And in the meane tyme, till suche persons can bee found as will bargaine for eche kind of woorke by greate, good orders muste be sett downe emonge the woorkmen, and there woorkes so sorted, and futch preparacon made for stufte convenient, that noe tyme be losse, nor paye ymployed on idle personnes.

For all these and euery other perticularities, the commysfioners may, from tyme to tyme, establish or make orders accordingly, as by the overseer of the woorkes, thay shalbe advertized of defaultes.

And

And thus maye the whole woorks be performed substantially, surely, and workemanly, and that with as smale charge and expences as ys possible.

And to the end, a fynall resolution in this matter may bee taken, and that the worke yt self, without farder delay, may goe in hand: I haue hereto allso adioyned articles of the true estate of the same haven, with futch alteracions as haue happened sythens the firste begynninge, buylding, and decaying of the peere, wherby yt shalbe easye, even as by a tutchstone, to trye, and certainly by reason to examyn the probabilitye of all plattes offered.

The articles ensue.

*Articles of the true estate of  
Douer Haven both before and sithens y.  
building of y<sup>e</sup> Peere, w<sup>t</sup> the alterations made  
by the beach, as it is found by y<sup>e</sup> examinacion of the  
most sensible, Auncient, and skilfull Men, by  
direction of the Lord Admirall of England,  
being at Douer the 21 December,  
anno 1581.*

Before the peere was builte out, there are men alyue can remember that there was no banckes or shelues of beache to be seene before Douer, but all cleane sea, betwene Arteclif tower and the castle clyffe.

By experience it hath byn allwayes found that as the peere was built out, so the banckes of beach allso beganne to growe, and lay farder out as the peere was farder built, and as the peere hath decayed, so thes banckes of beache allso haue byn ether scowred awaye, or dryven farder in, and that those



bankes of beache never reſte farder furth into the ſea, then they are defended by the peere.

Allſo it is found that the making of groynes will euer encreaſe quantitye of beache, and the decay or pulling downe thoſe groynes, doth allſo cauſe the ſame bancke of beach to weare away ſo farre furth as the groynes are builte or taken awaye.

Allſo yt is found that the abundance of beache ys ſo greate as thay cannot bee ſtaied by enye groinds, but that they will fill the groynds, and then goe aboute them, holdinge on there courſe as the fludde caryeth them.

Allſo that there is noe other enterance or haven mowthe at this preſente, but ſutch as the ebbinge out of the ſea water, and coorſe of the ryver doth keape open.

It is allſo found by experyence that y<sup>e</sup> ſame mowthe or enterance doth allwayes growe neerer and neerer towards the towne; and that in tymes paſte yt hath growne ſo neare, that by the violente radge of the ſea, paſſing through the ſame; a parte of the towne it ſelf hath byn in danger to be overthrowne.

Allſo it is found, that the beach hathe, and dothe increaſe ſtill more and more, vnder and beyond the caſtle.

Allſo y<sup>t</sup> lately where 5 rodd of bavyn worke haue byn made vp of the broken peere, the beache is allſo growne out to the end therof, and ſo grow<sup>th</sup> downe from thence lower and lower towards the towne warde.

Allſo it is founde that the greate rocks that were ſonken by kinge Henrie VIII. doe ſtill lye there, and are not remoued by eny violence of ſea, but by the wearing of them, or looſeneſſe of the ground vnder them, have ſonken ſomewhat lower and lower.

Allſo it is found that, parte of the peere ſtandethe on a firme rocke of chaulke, and parte on a ſoſte foyle.

Allſo

Allso it is apparante at this present, that where the beache and oaze are incorporate together in a maine shelf, yt so retayneth the water inclosed within the same, towards the clyffe, that there is euer a longe standing poole of water, 12 foote at leaste higher then the sea without at lowe water.

*The names of futch Masters and  
Townsmen of Douer, as acknow-  
ledged w<sup>t</sup> one Consent, all the  
Articles aboue conteyned, to  
be verie true.*

THOMAS WATTSON,  
WILLIAM TYDEMAN,  
THOMAS SISELYE,  
JOHN HARTE,  
JOHN GOULDSTONE,  
WILLIAM GILBERTE,

JOHN LEGEND,  
HARRY TYDEMAN,  
THOMAS BROUNGER,  
THOMAS HASELWOOD,  
JOHN APHOWELL,  
THOMAS PANTERYE.



*Articles of the State of Douer Harbour resolved  
upon before Master Richarde Barrie, Lieutenant  
of Douer Castle, John Garret Maior of Douer,  
and the Jurates there, the third day of  
January 1581, by the Examination of the  
moste sensiole, auncient, and skillfull Men  
and Maryners of Douer, upon certaine Questions  
or Articles proponed by Thomas Digges, Esq.  
whose Names are subscribed as followethe :*

Firste, thay affirme that the wooden staires of the peere did lye distante from the end of the bavyn worke nowe newly made, fixe roddes and foure foote.

Item, It is well remembred, that at a full sea, a shippe that had drawne 18 or 20 foote water, might haue layed her side to the said staires.

Item, thay affirme that thay haue knowne lye in the bight w<sup>th</sup>in the Crane, at one tyme, the Faucon, the Sacre, the Barke of Bulleyn, the Greyhound, the Rose Lyon, the George and the Dragon of the kings. And thay well remember that shippes of 200, and better, have ridden there.

Item, yt is knowne, by experyence, that the said staires stand vpon rockes of chaulke, and that is rocks of chaulke all alongest.

Item, thay say that the inward bight or old harboroughe called the Paradize, was mutche filled with oaze and beache, and that the same was caried out by mens hands, for to make the harboroughe better for the lodginge of Shippes.

Item, thay agree and affirme that the South and Southwest wyndes do bringe the beache : But it passeth away furthe w<sup>th</sup>out as yt comethe, vnlesse yt be stayed by groyndes.

Item,

Item, thay finde that these wyndes that bringeth the beache will carry away the fame furthe onn to the castle as aforefaid. And the Easte, and E. Northeft wyndes be the wyndes that do moſte ſtay the beache without the peere.

JOHN GARRET, Maior of Douer,	} Jurates.
THOMAS ANDREWE, Bailie there,	
ROBERT FYNNETT,	
THOMAS WATTSON,	
ROGER GRYCE,	
WILLIAM WELLYE,	
THOMAS BRODGATE,	
JOHN KNAPPE,	
JOHN BARGAR,	

WILLIAM TYDYMAN,  
 RICHARD SISELYE,  
 COBHAM DOVES,  
 HARRY TEDYMAN,  
 JOHN LEGENT,  
 ROBERT BIRTE,  
 WILLIAM COURTNEY,  
 RICHARD CARTER,

THOMAS BRONGER  
 JOHN HARTE,  
 ROBERTE EDGE,  
 JOHN TOOKE,  
 JOHN GOLSBY,  
 THOMAS MARYCHURCH,  
 THOMAS HASLEWOOD,  
 ROBERTE FLEM̃YNGE.



*Questions propounded by Thomas Digges, Esq  
resolved upon by the most skillful Seamen  
and Maryners of Douer, as foloweth:*

*Question.* Inprimis, Howe longe the tide that cometh from the South-west, commonly cauled the fludd, dothe roon on his cyurse after it is full sea, within y<sup>e</sup> harbour. I meane howe many howres it ronneth North-east before the full sea, and how manye howres after comonlye?

*Answer.* To that it is answered, the tyde of flud contynuethe ronnyng alongest the shoare three howres at the Mole hed, and so alongst to the North-east, afore yt is full sea in the harbour, and after it is full sea in the harbour; listewise other three howres.

*Question.* Item, how manye foote the water doth faull, or ebbe righte downe at or within the mole, before the tyde turne, I meane before the tide begynne to roon to the Sowth-west at y<sup>e</sup> Mole?

*Answer.* To that it is answered, that it faulleth in the springe streames ten or eleven foote, afore the tide begynne to run backe, and at a Neape streame seven foote.

*Question.* Item, whether the fludde or y<sup>e</sup> ebbe roonne fwyf-  
tест at the Mole hed?

*Answer.* To that it is answered, that the ebbe runneth fwyf-  
tест at the Mole hed, as they well fynd by experyence.

*Question.* Item, whether the tide that cometh from the North-east, commonly called the ebbe, doe run fwyftest, ether w<sup>th</sup>in the mole, or without the mole?

*Answer.* To that it is answered, that the ebbe dothe roonne faster and stronger without the Mole then w<sup>th</sup>in.

*Question.*

*Question.* Item, howe many foote the tide that cometh from y<sup>e</sup> North-east, doth make the water swell w<sup>th</sup>in the Mole, aboue the lowe water marke, before the tide cominge from the Sowth-west, commonly called the fludd, begynne to roonne?

*Answer.* To that it is answered, that it fwelleth in spring streames .x or xi foote, and in neape streames vii foote, before y<sup>e</sup> tide of fludd bee bente.

*Question.* Item, howe many foote is the water swollen or raized in heighte aboue the lowe water marke by the Mole, at such tyme as the tide firste begynneth to run from the South-west there?

*Answer.* To that it is answered, that it fwelleth or rayzeth in heighte aboue the lowe water by the Mole, at such tyme as the tyde firste begynneth to roonne from y<sup>e</sup> Sowth-west, ten or eleven foote.

*Question.* Item, howe many foote doth the fludd raize y<sup>e</sup> water from the first beginning or coming from the Sowth-west till it hath made full sea, and in what tyme, I mean at or within the Mole?

*Answer.* To that it is answered, that in a spring streame, at full sea, at the Mole, it higheth or raizeth twentie or one and twentie fote water, and at a neape streame, fourteene foote water.

*Question.* Item, in the bay before the towne, and againste the platforme, howe deepe maye yo<sup>u</sup> passe before yo<sup>u</sup> come to the firm foundation?

*Answer.* To that it is answered, that in the same baye it hath byn founded, and that within right over againste the platforme, w<sup>ch</sup> wee take yo<sup>u</sup> meane Penylefbenche, yt is foe incorporated with oaze and beach, that we cannot driue downe to the foundation any thinge: but at the lowe water marke  
it



it hath byn proued by a barr of ix foote longe, and it reacheth not y<sup>e</sup> foundation.

*Question.* Item, howe longe it is sithence the bankes of beache laye out beyond the wooden staires at the peere?

*Answer.* To that it is answered, that it is sithence eny pullers of beach came out beyond y<sup>e</sup> wooden staires in the peere, a twoe or three and thirtie yeres paste, and there hath not byn enye pullers of beache so farre out as the said staires this 18 yeares, by reason of the decay of the black bullwarke, and tymber worke vpon the Mole.

*Question.* Item, howe farre beyonde the wooden staires of the peere can eny man remember that the bankes of beache hath layen out towards the Molehed, and howe longe it is sithence?

*Answer.* To that it is answered, that they do well remember that bankes of beache haue lyen beyond the wooden staires towards the Molehed, a three hundreth foote longe, and it is a 29 yeres past.

*Question.* Item, howe farre, or howe many rodds beyonde the same wooden staires did the bankes of beach lye, towards the Molehed, at suche tyme as a parte of the streetes or howses of Douer towne were in daunger to have byn overthrown by the frettinges of the sea?

*Answer.* To that it is answered, that at the tyme when as the howses and streetes in Douer were in danger to be taken away, there lay no beach then w<sup>th</sup>out y<sup>e</sup> staires to the Molehed ward.

*Question.* Item, howe highe aboue the lowe water the tide that cometh from the North-east dothe commonly raize the water vnder the Mole?

*Answer.* To that it is answered afore in the 6 and 7 questions.

*Question.* Item, within the Crane, betwene the clyffe and the oaze banckes, how many foote doth yt commonly ebbe and flowe ?

*Answer.* To that it is answered, within the Crane, in the chanell alongst the clyffe ther standeth still six foote of water, and that it floweth vpon yt six foote of water more, so in all, at the full springe tide, ther is 12 foote water, and at a neape it floweth nothinge at all there, by reason of the oaze and beache incorporate together without.

*Question,* Item, at the Mole within: How many foote doth it commonly ebbe and flowe, righte vpp and downe?

*Answer.* To that it is answered twentie or one and twentie foote water.

*Question.* Item whether the tide that cometh from y<sup>e</sup> North east, comonly called the ebbe, doth not ronne very slowly within the Mole in respect of the course of the fluddwithoute?

*Answer.* To that yt is answered affirmatively that yt dothe.

THOMAS WATSON,  
JOHN HARTE,  
THOMAS GOODSON,  
JOHN LEGENTE,  
WILLM. GILBARD,  
JOHN GOLSTON,  
HENRYE TYDIMAN,  
JOHN TOOKE,  
THO. MARYCHURCH,

WILLIAM TYDYMAN,  
JAMES RYTHUR,  
RICHARD SYSELY,  
THOMAS HASLEWOOD,  
WILLM. COURTNEY,  
ROBERTE HEDGE,  
THO. WOODDE,  
JAMES NEALLS,  
THO. BRONGER.

1581.



*The Occasion and Charge of the other Plattes for  
Dover Haven, presented by Thomas Digges,  
w<sup>th</sup> the Harborough Mowth opened crosse the  
Peere. S: EST.*

Forasmutche as by some seamen it is thought more serviceable to lay the haven mowth rather crosse y<sup>e</sup> peere without, then Eastward within, because I wold be loth to geve eny ympedim<sup>t</sup> to the proceadinge of so ymportant a worke of your ma<sup>ts</sup> seruice, I am contente to yeld to that opynion. But this neverthelesse is manyfest, that the same can nev<sup>r</sup> be but a tide haven not mete to receave eny of yo<sup>r</sup> ma<sup>ts</sup> greate Shippes, nor yet to be entered at all tymes, wheras contrarywise if that Mole may be finished, wherof the greatest parte ys alreadye performed by kinge Henrye, yt shalbe a safe receptacle for the greatest shippes at all tymes to enter, and a sure rode for all wyndes that can blowe in the skie, and soe an incomperable jewell to this realme. Farder, wheras by laying the haven mowth crosse the peere, eny shipp that mysseth the enterance betwene the Jutties (as having such crosse currantes many in a yeare may) there is nothing but death vpon the ledge of the rockes, this Mole maye allways be a rescue and safe receptacle to salve them that otherwise muste certenlye perrishe. Farder the indroughte that will passe in by y<sup>e</sup> blacke bullwarke will allso mutch kill the fury of the crosse tyde, and purchase to the harboroughe a more mild enterance. And albeit both Mole and harbōrough may well be performed with lesse then 16000l. yet, because in newe workes it is harde to perswade a truth, the matter may be so ordered, as ether worke may be severally so finished as the one don shall not  
preiu-

preiudice the proceeding in the other hereafter. And to that end haue I framed other plattes accomodatinge both bayes and Sluces to best advantage to mayntayne the harboroughs mowth crosse the peere as is nowe defyred, and by aide of the Mole to prevente many perrills and difficulties y<sup>t</sup> otherwise yt wold be subiecte vnto, and a possibilitie allway lefte w<sup>t</sup> meane charge to open y<sup>e</sup> mowth, another way, yf this may hereafter be found subiecte to moe perrills then is nowe supposed. But to follow ether the Flem̃ysh platte, or eny other that I have yet sene made vpon that Sowthern haven mowth, the beste that can be hoped is a drye harboroughe for fyssher-boates, w<sup>t</sup> enterance verye scrupulous, and that enterance myssed, nothing but death certaine. And all possibility taken away without extreme charge afterward to make that Mole, w<sup>ch</sup> this realme were better geue a million, then wante. And albeit I could deliuer a greate number of sondry foormes of platts, to make very good and sure harboroughes yf yt pleased yo<sup>r</sup> mat<sup>y</sup> without respecte of charge to raize waulles and make baies, where I wold appointe, yet, considering the charge is a thinge more especially to be regarded ; in all my plattes I take hold of all suche foundacons allreadie laid, as any way may be ymploied to serue the turne, and soe dispose y<sup>e</sup> scituacions allreadie laid, as any way may be ymploied to serue the turn, and soe dispose y<sup>e</sup> scituacion of my longe bayes as they are made, and all the chanells altho scowred w<sup>th</sup> lesse charge then the clenfinge only of the haven in the Flem̃ythe platte would cost, as by conference of the plattes theselues mooste evidently shall appeare.



*A Computacion of the Charge  
of Dover Haven after the other Platt with  
Baies of Piled Case Woorke.*

The longe Baye that leadeth from the haven mowthe to the towne, cannot eny way bee foe good cheape made by ten thowfand poundes as by that forme of Baies compacte of oaze, beach and chaulke, w<sup>ch</sup> I have allredy declared.

The other Jutties and Bayes w<sup>ch</sup> I have wished to be made of ftoane, all, save the damhed, w<sup>ch</sup> muste needes be of ftoane, may better chepe and very substantially allso be made of piled case worke, ramforced w<sup>th</sup> crosse stone, the least a foote thicke without planckes, as at Flusshinge, may bee sene, where thay indure greater radge of sea then at Douer.

These piles must be 10 or 12 inches grosse, and 25 or 30 fote longe, placed on ether side not 6 ynches distant one from another at the foote of the Baye, thef rancks of piles shalbe a rodd distante, but at the topp they shall not bee 12 foote at the moſte a funder. They muste be crosse bound bothe with longe beames and crosse beames, and allso crosse piled, w<sup>ch</sup> kinde of work the Italians call *Palificata trauata*. It is of all other moſte fure against the vyolence of the sea, and nothings so chargeable as plancked worke to mayntayne.

In every rodd of length on ether side muste bee 12 piles of a foote or fomwhat lesse grosse, which, at 30 foote in length will amounte vnto about 14 lode of tymber, the said beames and crosse beames, together with the crosse rancks of pile, will require in every rodd ten lodes more, so will the whole tymber to per- li.  
forme a rodd of this worke cost at the place about 20l. 20

The

The workmanshipp in making and rearing the frame, and pay for laborers to fetch stoe, fill and ramforce the frame, together with the yron for boltes and armyng of the piles, will coste nigh asmutche more, and so every rodd fynished will coste 40l.	li.
- - - - -	40

*The MOLE.*

In the whole Mole, together with y <sup>e</sup> blackbulw <sup>rk</sup> there is 80 rodd, the w <sup>ch</sup> at 40l. a rodd will amounte vnto nigh 3000l.	li.
- - - - -	3000

The charges of the Damhed to be made all of stone, w <sup>t</sup> Slucs and Fludgats, as appearith by former accompts, will amount vnto nigh 3000l.	li.
- - - - -	3000

All the other Jutties and Bayes to be made of piled case worke will not be above 100 rod, at 40l. the rodd, 4000l.	li.
- - - - -	4000

The double bay to be made of oaze, beache, and chaulke, artificially coched in due forme and propor <sup>c</sup> on of a sea bay being not above 150 rod longe, at 20 marks the rod, amounteth vnto 2000l.	li.
- - - - -	2000

The ledge of rocks hereafter to be fonken at the Molehed 15 or 16 rodd in lengthe, raized about the lowe water by tuñes and tñboates, maye coaste 1000l.	li.
- - - - -	1000

*S U M A*



*SUŃA SUŃARUM.*

13200l.

One of my later plattes hath a middle bay more then the other, but confidering it abideth not eny pente or burden of water yt will not cost haulf the charge of y<sup>e</sup> other bay, nevertheleffe for that and certaine fide fludgates (as at Sluce in Flaunders are vfed) which are in y<sup>t</sup> platt more then in my other, I allowe 1800l. as the vtmofte fome y<sup>t</sup> will cost more then the other, and fo will the charge of that fecond platte be 15000l.

li.  
15000

XXI. Ac-