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Papers on the Fens

By W. H. Wheeler

from the Stamford Mercury

DRAINAGE OF THE FENS.—Mr. W.H. Wheeler, surveyor to the Boston Harbour Commissioners, proposes the following mode of improving the Witham:—"Twenty years ago (he observes) it was found necessary to drain the river from Maudfoster to Hobhole, and now all that is required is to extend this work about two miles further. The meandering course of the river originally round Slippery Gowt and Burton's Marshes had the same effect in damming up the water and preventing its free utterance. The Corporation of Boston straightened the channel by means of training walls of faggots and clay; thus confining the waters and shortening their course. An immediate benefit ensued, the channel was greatly improved, and for some time the advantage to the drainage was very considerable. The sands that then interfered with the free current of the water have become dry land, and instead of being a curse are now growing good corn and other crops. But this work is beginning comparatively useless, because the sands below the training walls form a barrier to the water and choke the new channel. The simplest plan to remedy this state of things will be to continue the fascine work below the Hobhole, in the direction of Elbow buoy, and to confine the water within a narrow channel to one course. The force of the tides and freshets will then both be exerted in scouring out and maintaining the channel; the sands that are now rolled about and driven into the river will become land, and in a few years will be reclaimed in time, and the benefit to drainage and navigation immediate and palpable. I see no reason to doubt that if this were done the water on Hobhole sill would be reduced to three feet, allowing the rate of inclination below Hobbhole to be the same as it is above that point. There is no engineering difficulty about the work—no rival interests to interfere with. The expense will be trifling compared with the advantages. The value of the cropping lost by the water standing on the land would pay for it two or three times over. The length of fascine work necessary would be about two and a half miles. The first half mile would require barrier walls on both sides of the stream, but after this the hard bed of clay of the scalp would form a natural barrier on the east side, and fascine work would only be required on the west side. The cost of those barrier banks, or training walls, would amount to about £10,000 or £12,000. The Harbour Trustees, the conservators of the Outfall, having already spent upwards of £60,000 in improving the river, as much to the benefit of the drainage as the navigation, have not the means of carrying out this work single-handed, and it can only be done by the union of all the trusts interested. The works that are now being carried out in the Upper Witham, and the proposed pumping sheme for the fourth district, will prove of little benefit unless the Outfall is first improved. The execution of these works is analagous to the case of a farmer underraining his field when the ditch into which the drains are to empty is blocked up. In all drainage the first requisite is a good outfall, and without it the most extensive interior works are comparatively futile."

PAPERS *on the* FENS *of* LINCOLNSHIRE,

By W. H. Wheeler, Surveyor to the Corporation of Boston;

Being a description of the Rivers Witham and Welland, and their Estuary; and an account of the reclamation and drainage of the Fens adjacent thereto.

The author of these papers having lately had occasion to examine the documents relating to the Outfall of the Drainage of the Fens, was induced by the interest of the subject to extend his researches into the various works that bear upon their general history and reclamation, and has collected together a number of facts and statistics sufficient to enable him to complete a short history of the Fens of this part of the county of Lincoln. He considers that an account of the means that have been adopted for the drainage and enclosure of 250,000 acres of land, a space larger than some of the English counties, which from having been little better than a mere morass, has become one of the richest tracts of agricultural land in the country, must of itself be interesting, however badly the subject may be treated by the author. These papers pretend to no originality or literary merit whatever, but will be simply a collection of facts compiled from various works that in any way treat of the subject, many of which are now out of print; and the reports of engineers and other official documents, not accessible to the general public. No complete account of the later history of the Fens exists. The earlier history has been partially described by Sir W. Dugdale, in his treatise on Embanking and Draining, and much interesting matter, bearing on the subject, is to be found in Elstob's History of the Bedford Level, and Ingulph's History of Crowland. Mr. Thompson, in his History of Boston, has also devoted a short space to the Fens; but the design of his work, being confined to a History of the Town of Boston, embraces only a brief outline of the Fen history. From these and various other sources the author has collected his information, and whenever practicable has preferred to use the language of the author he quoted to that of his own. The papers will be continued from time to time, and are intended to commence with a full account of the last successful attempt to reclaim the Fens, but in order to render the subject more clear the first chapter will be devoted to a sketch of the original formation of the district and the various changes it has undergone; the second chapter will be devoted to the river Witham and the Fens adjacent thereto; the third to the East, West, and Wildmoor Fens; the fourth to the Holland Fen and the Black Sluice District; the fifth to the Welland and Deeping Fen; the sixth to Boston Harbor and Haven; and the last to the Estuary, and the various schemes that have been brought forward for its improvement in connection with the drainage and navigation.

Boston, August, 1867.

CHAPTER I.—*Introduction and Early History of the Fens.*

The Great Level of the Fens comprises all that vast tract of land on the east coast, extending southwards, from the high lands in Lincolnshire, for a distance of about 60 miles, and occupying portions of six counties. It is only the history of the northern portion that will be sketched out in these papers, or that part bounded on the north by the Steeping river and the villages of Toynton, Revesby, and the city of Lincoln; on the west by the Car Dyke; and on the south by the river Welland; and comprising the East, West, and Wildmore Fens, the lands adjacent to the Witham, known as the six districts, Holland Fen and the Black Sluice Level, and Deeping Fen and the lands on the north of the Welland.

The Fens have obtained a world-wide notoriety, and a general though very erroneous impression prevails, among those who have not visited this county, that Lincolnshire is a dull and dreary land, to be avoided by all whom necessity or the calls of business do not compel to visit its inattractive scenery. But although the fens include an area of about 500,000 acres (equal in extent to some of the English counties), there yet remains of Lincolnshire about one and a quarter millions of acres, which can vie with any other part of England for the picturesqueness of its scenery and the salubrity of the climate; while the rich grazing and corn lands of the fens stand unrivalled for their productiveness, and are cultivated by inhabitants whose condition, general physique, and health will bear very favourable comparison with any other district of Great Britain.

The original formation of the soil of these fens, although recent in the geological classification, takes us back to a time anterior to the existence of man, when the whole of this district was beneath the waters of the sea. For a depth of nearly 600 feet nothing has been discovered but an aqueous deposit of clay mixed with shells and stones. At the time when this history commences, this deposit had accumulated to such a height as to be above the ordinary tides, and only the lower portion of the Fens, or the parts nearest to the sea, were under ordinary circumstances overflowed by their action. Possibly trees had already grown to a considerable size on the higher portion, or that farthest removed from the sea; and on spots here and there in the lower parts, which had risen higher than the rest; as we see in the villages of Stickney and Sibsey at the present day, and these were doubtless inhabited by the aborigines of the island. The rest was covered with coarse grass, sometimes available for pasturage, and at others inundated in turns by the overflowings of the rivers and the tides. The land at this time was peopled by the Britons, a rude, uncultivated race of men. Their religion was one that sought the solitudes of woods and dark groves for the observance of their mysterious and sometimes sanguinary rites, and probably the priests availed themselves of the secret recesses of the fens for the erection of their altars.

In the year 55 B.C. the Roman Generals, ever seeking fresh conquests to add laurels to their arms, first sought out and invaded the island of Britain, and having once obtained a footing found the country so profitable that they remained here for a period of nearly 600 years. While we look to the sober pages of historical facts for a correct knowledge of the doings of bygone days it is pleasing to allow our imagination to be assisted in realising the events those facts disclose by a perusal of the works of writers of fiction who have endeavoured to render our ancient history a true and living picture. All who take a delight in this class of literature will call to mind the charming and vivid description of Esca, the British chieftain, a slave at Rome, and the old Roman general, who was reminded by the presence of his Saxon attendant of his buried loves and hopes in the far off woods of conquered Britain, where all his glorious deeds of arms were saddened by the recollection of the fair haired British maiden he had seen and wooed in the British forest.

The Romans, having once firmly established themselves in the island, maintained their conquest by the presence of a large force, which was stationed at several military depôts, scattered throughout the country. Of these Lincoln became the head quarters of the midland district, or that part of the country then inhabited by the Coritani. The thorough knowledge and appreciation of agricultural arts, ever so prominent in the Romans, would lead them at once to see the value of the large tract of fen land lying so near their station; and the experience they had acquired in enclosing and draining, about this time, similar tracts of marsh land in the south of Italy, and also in the Belgian Provinces, and in constructing through the Pomptine fens a large cut, which served the double purpose of a sewer and a canal would at once suggest to them the feasibility of reclaiming the great level of the fens. The labour necessary in carrying out the work would provide ample employment for their soldiers and captives; it being ever a practice with the Roman generals to keep the legions from idleness and discontent by constant employment;* and by this salutary rule they had ever at their disposal a mighty force which enabled them to carry out those vast engineering works, the traces of which, even at the present day, are to be found in every country which they subdued.

Another powerful motive that would lead to the embanking of the fens doubtless arose from the security they afforded to the natives, who, as related by Marcellinus, "not dwelling in the towns but in cottages within fenny places, compassed with thick woods having hidden whatsoever they had most estimation of, did more annoyance to the wearied Romans than they received from them." In fact the fens would form a sort of camp of refuge for the Britons, as later they did to the Saxons, where it would be impossible for any military force to follow and dislodge them; and it is evident the Romans could neither pasture their cattle on the marshes nor enjoy any security for their property until the natives were hunted out of their retreats.

Having once undertaken the reclamation of the watery waste, the Romans proceeded in the most skilful and artistic manner, pursuing a course that has been taken as a model by the engineers of modern times, being adopted by Mr. Rennie in his scheme for the drainage of the East and West Fens. The work divided itself into two parts—the embanking, to shut out the sea water; and the draining, to void the rainfall falling on the surface of the enclosed land, and also poured on to it from the higher ground adjacent. To effect this latter object a large catchwater drain was made, skirting the borders of the fens, intercepting the water from the high lands, and preventing it pouring on to and inundating the fen. This cut commenced near Lincoln, communicating with the Witham, and extended along the whole western side of the fens till it joined the Welland, and thence continued to the Nene. It was made navigable, and would afford communication between Peterboro' and Lincoln, and also with ships coming by sea, by means of the rivers Nene or Witham, and give an easy means of transporting military stores and provisions to their inland depôts. The canal is known by the name of the Car Dyke, and its course may be clearly traced at the present day. Ample testimony to the wisdom that designed it is provided by the various projects that have been brought forward by modern engineers for utilising such parts of it as passed through the fens, then immediately under their consideration. The course of another artificial cut or drain may be traced in the "Westlode," which drained the low lands towards Crowland and Deeping Fen and emptied into the Welland.

The drainage of the interior of the fens was provided by other cuts, the remains of which are scarcely to be traced at the present day, but there is no doubt the Old Hammond Beck was one of these. These interior drains, which discharged their contents into the rivers, were protected by sluices, but the rivers themseves were embanked and the tides allowed to have their free course up them, ships navigating the Witham as far as Lincoln.

The sea was shut out from overflowing the low lands by those stupendous embankments which surround the level, and on the integrity of which, at this very time, depends the safety of all this district One breach in these banks, and in a few hours property to an enormous amount would immediately be destroyed, and the land rendered a scene of desolation. These embankments, as viewed at the present day give but little idea of the magnitude of the labour involved in their construction. To form a more correct idea of this, it must be borne in mind that since that time the land has been raised several feet in height, and the base of them, which at the period of this erection stood above the surrounding ground, now forms part of it. The banks enclosing part of the great level to which this history is confined extend to a length of upwards of 50 miles —at so great an expenditure of time and labour was this land reclaimed from the sea.

The great care of the Romans, after having thoroughly embanked and drained the land, was to provide the means of easy communication by the construction of roads. These were not formed on the principle followed by the reclaimers of the fens of our generation, who deemed it sufficient to leave a wide space and call it a road, but were constructed in the most solid and substantial manner, with brick and stones cemented together, and laid in regular courses, with a concrete foundation, and so solidly and firmly were they built that traces are constantly being discovered in a complete state of preservation. The chief road passing through this district was a loop line of the Great North-road, or Ermin-street, which, after crossing the river Nene, pursued a N.E course through Thurlby, Bourn, towards Sleaford, and thence through Ruskington, Dorrington, Blankney, and Metheringham, to Lincoln, where it joined the main line.

Another road, across the country from the salt mines in Worcestershire is supposed to have passed through the fens by Bolingbroke, Stickford, Sibsey, and so to Boston, and across the Witham by a ferry near Redstone Gowt, thence to Kirton and Donington, and so on in a straight line till it joined the branch above described. The remains of this road may be clearly traced in the Bridge-end causeway, and by foundation of stone and gravel which has been laid bare throughout its course; as also by milestones, one of which, near the Pincushion inn at Wyberton, remained in existence until quite recently.

The land, thus embanked drained, and provided with roads, soon became fertile and covered with vegetation and trees, which appear from the remains that have been discovered to have flourished more vigorously in those days than they have under the more recent reclamation. Besides thus affording employment and subsistence to the Roman colonist, this part of the country doubtless also provided materials for export to the mother country, both manufactured and in their natural state. Of the latter kind, some of the British oysters, which were held in such great esteem by the epicures of the imperial city, were probably taken from their beds in the "Metaris Estuarium," known in modern days as Boston Deeps; and of the former it is supposed by some antiquaries that the salt pans, the remains of which have been discovered on many parts of this coast, are due to the art and industry of the Romans. The practice of manufacturing salt, by evaporating sea water in pans or reservoirs dug on the margin of a tidal stream, is exceedingly ancient, and the known skill and ability with which the Romans availed themselves of every opportunity of turning to good account the gifts of nature, may fairly lead us to suppose that they would adopt so simple a means of providing themselves with a supply of a commodity as valuable and scarce as salt was in those days. It is certain, from the mention in many old Saxon chronicles of the numerous grants of land in which salt pans are mentioned, that their successors knew of this method of making salt, and that it was highly prized by them, great quantities being used for salting meat for their winter store of food.

After an occupation of upwards of 400 years, about the year A D. 420, the Romans were obliged to withdraw their legions from Britain to assist in the defence of their own country. The same cause that effected the decline and fall of the Roman empire led to the occupation of this island by uncultivated and warlike Saxons. The movement amongst the Teutonic Nations of central Europe, which scattered them in all directions in quest of plunder and conquest, while leading the great body of that nation to the rich booty to be obtained in the cities of Italy, also sent the Saxons across the water to the neighbouring shores of Britain, which, deprived of its protectors, fell an easy prey to their predatory bands. Having once conquered the island they permanently settled here.

The Fens, lately so flourishing, soon became once more a scene of desolation Tradition says that the Saxons, in their contests with the Britons, cut the banks and drowned the land on purpose; but even, if this were not willfully done, it is easy to conceive how soon the banks and sluices would go to decay and ruin, if neglected, and how rapidly the whole fen would become a mere morass covered daily by the tides, if they were not kept up. That no such attention and vigilance would be bestowed on them by the invaders we can easily conceive by the knowledge that history gives us of their character and barbarous habits at the time of their incursion. While the rudest dwellings sufficed to content them, war and plunder, perpetual quarrels and fights, occupied all their time; and while it is doubtful if they were possessed of knowledge and skill sufficient to maintain the engineering works constructed by their predecessors, it is certain they would hold in contempt the arts and practice of agriculture, for which purpose alone the fens were adapted

For 200 years after the departure of the Romans the waters were allowed to have full dominion over the fens. The rivers, obstructed in their outfalls, prevented the rainfall from flowing away, and the water, stagnating on the ground, made the whole a vast morass; the coarse grasses and herbage that sprang up in the summer months decaying away in the winter, and assisting to form that layer of peat that is found more or less throughout the whole surface of the fens, but much deeper in the upper part, or that furthest removed from the sea The eruption of the tides, through the broken banks, swept away at once all the signs of former prosperity, and the numerous trees, washed up by the roots, that have been found buried in the fen soil, attest to the power with which the torrent of waters devastated the land; and while the upland waters assisted in raising the surface by the formation of peat, the tides brought in a great quantity of silt and alluvial soil, which was deposited to a depth of from 12 to 18 feet at the parts near the mouths of the rivers, gradually diminishing towards the interior and higher grounds to a depth of from one to three feet Numerous discoveries that have been made in excavations at different times in all parts of the Great Level bear witness to the correctness of the theory as to the formation of the upper stratum of the fens, of which the following are selected as samples:— In the excavations made for the erection of the Black Sluice, at Boston, in 1817, the first 12 feet was found to be warp, formed by a deposit of a reddish brown clay, left evidently by the sea; this rested on another layer of warp, five feet in thickness; which was followed by a stratum of peat 12 to 18 inches in thickness, in which were contained the remains of oak and other trees; below the peat was a layer of sand, and below this was the clay found everywhere beneath the fens, and which has been bored through, in Boston, to a depth of 555 feet. A well sunk at Sutton displayed a similar stratification; the first 16 feet was clayey warp, then came 3 to 4 feet of moor or peat; then 20 feet of soft moor mixed with shells and silt; then, for a distance of 95 feet, clay mixed with chalk stones; and below that gravel.

*Probus prevented the irregularities of the soldiers by employing the legions in constant and useful labours. When he commanded in Egypt Probus executed many considerable works for the splendour of that rich country. The navigation of the Nile was improved, and temples, bridges, porticoes, and palaces were constructed by the hands of the soldiers, who acted by turns as architects, as engineers, and as husbandmen. It was reported of Hannibal that, in order to preserve his troops from the dangerous temptations of idleness, he had obliged them to form large plantations of olive trees along the Coasts of Africa. . . . . He thus converted into tillage a large and unhealthy tract of marsh ground near Sirmium. . . . . In one of the hottest days of summer, as he severely urged the unwholesome labour of draining the marshes of Sirmium the soldiers, impatient of fatigue, on a sudden threw down their tools, grasped their swords, and broke out in a furious mutiny, and finally murdered the unfortunate Emperor. Gibbon, cap XII.

[To be continued.]

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[Continued from last week's *Mercury*.]

In digging for the foundations of the Grand Sluice, in 1764, at about 18 feet below the surface, the roots of several trees standing as they had grown were found; and also at about the same depth, a layer of shells of a kind similar to those found in the marsh creeks at the present time. In the excavations for Maud Foster sluice, in Skirbeck, there was found at 16 feet below the surface a smith's forge with all the tools belonging to it. In 1696, on the Welland, about 10 feet below the surface, the remains of old tan vats were discovered, and great quantities of horns and shoe soles of strange and unusual forms; also a number of boats. (*Elstob's History of the Bedford Level*) At Lynn a cart wheel was found 16 feet below the surface. In other parts of the fens great trees, swarths of grass, and other indications of cultivation have been found buried in silt and warp. While thus these discoveries clearly show that the surface has been raised near the outfalls of the river to a height of from 14 to 18 feet, the remains of trees &c. crop up nearer to the surface the further they are removed from the coast. Thus at Bardney, Mr. Edwards in his survey in 1769 gives the following account of the formation of the ground:—"Bodiam sands, near Bardney, lie about three feet and a half below the surface of the adjacent lands. They consist of a thin bed of sand upon a bed of strong blue clay, full of large coggles and stones, on which bed was found a great number of oak, yew, and alder roots and trees which had grown thereon. The soil on each side is moory and full of subterranean wood to three and a half feet thick. The oak roots stand upon the sand, and tap-root into the clay. Some of the trees are five feet in diameter at the boll, and more than ten feet from out to out at the root." One large tree was discovered at Bardney containing 1440 feet of timber. This tree was found three feet below the surface, lying upon clay and gravel, and covered with peat. In Friskney, Wainfleet, and Wrangle, and in the East Fen, great numbers of fir trees with their roots have been discovered in the moory soil, one foot below the surface in the low parts, and from two to six feet in the higher lands. They lie in all directions, and appear to have been torn up by the operation of water.

From the formation of the soil and these discoveries, it is evident that the whole surface of the fens must have been considerably raised by decaying vegetation and aqueous deposits spread over a long series of years. The trees prove that this deposit took place after the land had been protected from the salt water; and the shoe soles, smith's forge, and other articles of civilised life all denote a period posterior to the occupation of the island by the Romans.

The first returning signs of prosperity probably date from a period of 200 years after the departure of the Romans, when Pope Gregory, touched by the beauty of the fair complexion and blooming countenances of some English youths exposed for sale in the streets of Rome, and finding their native religion was that of Paganism, expressed his conviction that it was a pity that the prince of darkness should enjoy so fair a prey, and that so beautiful a frontispiece should cover minds destitute of internal grace and righteousness. He therefore sent St. Augustine, with forty other monks, to spread the knowledge of Christianity amongst the Saxons and Britons; and so successful was their mission that the doctrines of Christianity soon became deeply rooted throughout the whole of England. (*Hume's History of England*) Amongst other monks who followed the footsteps of St. Augustine was one Guthlac, a holy man of God, who, seeking a place more desolate than any other whereto he might retire and pursue his holy meditations, came to Crowland, and finally settled there. His reputation for holiness soon attracted other monks, and ultimately a monastery was established. The fens around are described by his biographer "as immense marshes, now a black pool of water, now foul running streams, and also many islands and reeds and hillocks, and with manifold windings, wide and long, it continues up to the North Sea." Croyland soon became a place of note in the kingdom, and about the year 716 Ethelbald, king of the Mercians, having been instructed by the counsels and prevailed upon by the prayers of the devout anchorite Guthlac, his dearly-beloved confessor, gave granted, and delivered unto Almighty God and the blessed Virgin and Saint Bartholomew out of his demesnes, for the purpose of founding a monastery of black monks, the whole island of Crowland, the same to be set apart for the site of an abbey; and also granted from his treasury the sum of 300*l.* towards the building of the same, and an annual payment of 100*l.*, with liberty to the monks to enclose as much of the marsh land as they should see fit. Croyland, consisting of fenny lands (as in fact its name indicates, for it means "crude" and "muddy" land), was found not able to support a foundation of stone; wherefore the King ordered huge piles of oak and beech, in countless numbers, to be driven into the ground, and solid earth to be brought by water in boats, a distance of ten miles, from a place called Upland, and to be thrown into the marsh. (*Ingulph's Chronicle of the Abbey of Croyland, Bohn's Edition.*) A similar difficulty was overcome by the monks of Peterboro', who built a monastery in 655, and obtained a foundation by plunging into the marsh stones so immense that eight yoke of oxen could scarcely draw one. (*Turner's History of the Anglo-Saxons.*) Other monasteries were established by the Saxons on the Witham. St. Botolph, in the year 654, built one on a desert piece of ground, near its mouth supposed to be the site of the present town of Boston, and one was established at Bardney about the year 697. Saint Guthlac became the patron saint of the fens, and the numerous churches that are dedicated to his memory attest the esteem and popularity of the first Christian reclaimer of this part of England. In a niche in the wall of the parish church of Fishtoft is a statue of St. Guthlac, its patron saint; and there is a tradition connected with this statue that so long as the whip, the usual insignia of the saint, remained in his hand the parish of Fishtoft should not be infested with rats and mice. (*Thompson's History*)

A love of desolation and seclusion, the old Chronicles tell us, was St. Guthlac's motive in seeking the fens for his residence. His followers probably were attracted by other motives, amongst which may have been the valuable fisheries to be found in the fen rivers, which, anterior to their coming, had been of little benefit to the natives, for we are informed that the Saxons learnt the art of catching fish from the Romans. The art once acquired, fish became such a favorite food that the supply never equalled the demand. Turner, in his History of the Anglo-Saxons, thus refers to the value of fisheries:—"The Saxons eat various kinds of fish, but of this description of food the species that is most profusely noticed is the eel. They used eels as abundantly as swine. Two grants are mentioned, each yielding one thousand eels, and by another 2000 were received as an annual rent; 4000 eels were an annual present from the monks of Ramsey to those of Peterboro'. We read of two places, purchased for 2*l.*, wherein 16 000 of these fish were caught every year; and in one charter twenty fishermen are stated to have furnished during the same period 60,000 eels to the monastery." In the dialogues composed by Elfric to instruct the Anglo Saxon youths, giving an account of the fisheries, the following are mentioned as forming the food of the people: eels, haddocks, skate, lampreys, and whatever swims in the river; and as the products of the sea, herrings, salmon, porpoises, sturgeon, oysters and crabs, mussels, cockles, and such like. Both the Witham and Welland were celebrated for their fish, and doubtless afforded many a dainty meal to the abstemious abbots and monks residing in the various establishments founded on their banks.

As these monasteries increased in size and importance, they attracted numerous retainers and servants, and attention would be given by the owners of the abbey lands to the improvement of the fens around. The establishment of Mercia, in which Lincolnshire was included, into a separate kingdom about this time, and its consequent prosperity, would also assist in the restoration of the fens to some degree of their former prosperity. In the year 870, the marshes, as they were then termed, are described by Hugo Candidus as furnishing wood and turf for fire, hay for cattle, reeds for thatching, and fish and water fowl for subsistence. A temporary stop was put to this growing prosperity by the Danes, who in their various predatory incursions into England selected this part of the east coast as their favorite landing place. The following account of the invasion of the fens by the Danes, in the year 870, the fourth of their residences in England, is given by Sharon Turner:—

"They embarked on the Humber, and sailing to Lincolnshire landed at Humberston, in Lindsey. After destroying the monastery, and slaying all the monks of Bardney, they employed the summer in desolating the country around with sword and fire. About Michaelmas they passed the Witham, and entered the district of Kesteven. The Earl Algar drew out the youth of Holland: his two seneschals, Wilbert and Ledric, assembled from Deeping, Langtoft, and Baston, 300 valiant and well-appointed men; 200 more joined him from Croyland monas-

tery: they were composed of fugitives, and led by Tollus, who had assumed the cowl, but who, previous to entering the sacred profession, had been celebrated for his military character. Morcar, lord of Brunne (Bourne), added his family, who were undaunted and numerous. Osgot, the sheriff of Lincoln, collected 500 more from the inhabitants of the country. These patriots, not 3000 in number, united in Kesteven with the daring hope of checking by their valour the progress of the ferocious invaders. On the feast of St. Maurice they attacked the advanced bands of the north men with such conspicuous bravery that they slew three of their kings and many of their soldiers: they chased the rest to the gates of their entrenchments, and notwithstanding a fierce resistence they assailed these till the advance of night compelled the valiant Earl to call off his noble army. The English, ultimately beaten, the Danes burn and destroy all the towns and villages,—ravaged and destroyed Croyland Abbey; the venerable Abbot was hewed down at the altar, and the Prior and the rest of the monks murdered; all the tombs and monuments broken, and the 'superb edifice' devoured by fire; having accomplished which they set out for Peterborough. The Danes were finally defeated in 878, and Alfred the Great reascended the throne of England. The monks returned to their ruined homes, which they soon set about re-building, and although during the intervening period of the Normen Conquest several incursions were made by the Danes, in which the fen men were engaged, no special fact is recorded by history which throws any light on the state and condition of the fens during this period."

At the time of and subsequent to the Conquest of the Island by William of Normandy, the fens became the refuge of the discontented Saxons; or as Dugdale tells us, "This land is environed with fens and reed plecks—unpassable; so that they feared not the invasion of an enemy, and in consequence of the strength of this place by reason of the said water encompassing it, divers of the principal nobility of the English nation had recourse into it as their greatest refuge against the strength and power of the Norman Conqueror:" *(Dugdale,* p 185). The fenny districts of the kingdom of Mercia had always been a country difficult to conquer, and the habitation of a people still more difficult to keep in subjection; and these districts now became the 'camps of refuge' to the scattered and discomfitted Saxons. When William the Conqueror had subdued all the rest of England, a brave body of men in the fens still refused him allegiance: their remote situation and solitary habits made them conservative of their ancient rights and privileges, and zealous in their allegiance to their liege lords and masters. "It is men of this kind, whose position gives them more natural security than their neighbours, and consequently more independence, who have been found the last to be conquered in every country where their subjugation has been attempted. What the rock and defile were to the mountaineer, the reed field and mere were to the fen man his home, the source of his subsistence, and his defence in seasons of oppression or misfortune." Under Hereward, son of Leofric, Lord of Bourne, many a bold fight was made for liberty against the usurpers, Ivo of Taillebois, William of Ghent, and other Normans, to whom King William had given the land of the Saxons; and driven by the conquerors from place to place they at last made the Isle of Ely their final camp of refuge, where were collected many of the principal Saxon nobility and ecclesiastics. Long and nobly did Hereward, by his sagacity, bravery, and self-devotedness baffle all the attempts of the Normans to obtain possession of the stronghold The deeds of Hereward long lived in the traditions of the people, and have come down to our day in the narratives of the ancient chronicles, and have lately been revived by a modern writer in the graphic and touching romance of Hereward the last of the English *(C Kingsley)*, in which the writer shows a knowledge of the old fen country in Saxon times, as only one who had studied all the old chronicles could give. One short quotation from this interesting work may here be given, as descriptive of the fen country between Bourne and Crowland.

"Hereward had just returned from Flanders to his native country, and arriving at Bourne, the home of his ancestors, he finds the place besieged, and on enquiring what has happened is answered: 'What has happened makes free Englishmen's blood boil to tell of. Here, Sir Knight, three days ago, came in this Frenchman with some twenty ruffians of his own, and more of one Taillebois too to see him safe; says that this new King, this base-born Frenchman, has given away all Earl Morcar's lands, and that Bourne is his; kills a man or two; upsets the women; gets drink, raffles, and roysters; breaks into my lady's bower, calling her to give up her keys, and when she gives them will have all her jewels too. She faces them like a brave Princess, and two of the hounds lay hold of her, and say that she shall ride through Bourne as she rode through Coventry. The boy Godwin—he that was the great Earl's godson, our last hope—draws sword on them, and he, a boy of 16 summers, kills them both out of hand; the rest set on him, cut his head off, and there it sticks on the gable spike to this hour.' Hereward, engaged beyond endurance by this and other accounts of the evils that had fallen on his country, his family, and his friends, rushed down to the hall, where were assembled the Frenchmen engaged in drunken revelry, and with his own hand slays the whole of the guard left in charge of Bourne, fourteen in number. The next day he set out for Crowland Abbey with his mother, the Princess Godiva, and they went down to the water and took barge, and laid the corpse of young Godwin therein; and they rowed away for Crowland by many a mere and many an ea; through narrow reaches of clear brown glassy water; between the dark green alders; between the pale green reeds, where the boot clanked and the bittern boomed, and the sedge bird, not content with its own sweet song, mocked the song of all the birds around; and then out into the broad lagoons, where hung motionless high over head hawk beyond hawk, buzzard beyond buzzard, kite beyond kite, as far as eye could see. Into the air as they rowed on whirred up the great skeins of wild fowl innumerable, with a cry as of all the bells of Crowland, or all the hounds of Brunneswold; and clear above all the noise sounded the wild whistle of the curlews, and the trumpet note of the great white swan; out of the reeds, like an arrow, shot the peregrine, singled one luckless mallard from the flock, caught him up, struck him stone dead with one blow of his terrible heel, and swept his prey with him into the reeds again."

The King having at last subdued Ely, the fen men, in common with the rest of England, had to submit to the conquering arm of William of Normandy, and the country was parcelled out amongst his followers, the land in this district being chiefly shared by Alan Rufus, Earl of Brittany and Richmond, Walter D'Eincourt, Guy de Creon or Croun, and Gilbert de Gaunt. The Earl of Brittany had his chief residence at Kirton, and there is reason to suppose that the Earl of Richmond had a seat in the parish of Boston, prior to the thirteenth century. Walter D'Eincourt also had a residence at Kirton, although the head of his barony was at Blankney; Guy de Croun resided at Frieston. And so the Norman blood became mingled with that of the Saxons of the fens, as the old Girvii, men of "Gyras" or marshes, had been crossed with the blood of Scandinavian Vikings in Canute's conquest; and mixed with the descendants of Britons and invading Romans and Danes, and afterwards with French refugees. Huguenots from the persecutions of the Catholics. Kerneyden's Dutchmen again added the characteristics of another land, and left behind them marks of their country's manner that may yet be traced.

In Cromwell's time a number of Scotch prisoners, from the battle of Dunbar, were sent to work on the dykes and banks and settled down, and their descendants remain to the present day. To this strong intermixture of races, representing enterprising colonists, daring robbers, fierce soldiers, zealots who preferred expatriation to an abandonment of their particular tenets, the clean and steady Hollander, and the clear-headed and enterprising Scotchman, may be attributed that sturdy independence and self help, that freedom of thought and persevering industry and enterprise, that distinguish the inhabitants of the fens at the present day.

After the Norman Conquest, and the settlement of the island, the religious establishments began greatly to multiply, and many of these were settled in the fen country, which was described as "being full of monasteries, and as having large bodies of monks settled on the islands of these waters" *(William of Malmesbury)*; "to whom were made grants of lands and rights of fishing, fowling, and turbary (digging turfs), which appear to have been considered of much value from the numerous disputes respecting these rights of which records exist. But although the idea of draining and reclaiming the fens appears from time to time to have been projected, and John of Gaunt Duke of Lancaster and Margaret Countess of Richmond took the matter in hand, nothing was actually done, and the chronicles inform us that "the generality of people in that age was possessed of an opinion that the project was utterly impossible to be brought about."

Besides the fisheries, the fens also afforded harbour and shelter to the wild animals of the country, and King Henry the First afforested all the low lands of South Lincolnshire, and they continued for many years to be the King's hunting grounds. The game protected consisted of "wild fowls and beasts of the forest, as the hart, hind, and hare; of chase, as buck, doe, and fox; of warren, as rabbit, pheasant, and partridge."

The condition of the level seems to have been subject to constant changes; at one time presenting every appearance of prosperity, and being described "as a very paradise and a heaven for the beauty and delight thereof, the very marshes bearing goodly trees." *(William of Malmesbury)* That it must have greatly increased in importance and prosperity is evidenced by the fact that in the year 1204 the town of Boston had grown into such importance as to have a charter granted to it by King John; and it carried on at that time the manufacture of woollen cloth to a considerable extent. In the same century Holland Fen was ordered to be divided into townships. On the other hand there are frequent accounts of floods, and complaints of bad drainage. In 1281 Holland Fen was inundated, and in 1288 great part of Boston was drowned; and Henry III., taking notice that not only the land-owners in those parts but himself had suffered considerable damage by the overflowing of the sea, and also of the fresh waters through default in the repair of the banks, sewers, and ditches, directed the shirereeve to distrain the goods of all landowners who ought to have repaired the banks and scoured out the drains. And in the following reign commissioners were appointed to view the banks and sewers, and to see that the ancient passages of the waters were kept open and the banks properly repaired. From this time forward numerous commissions were issued by the Crown for the like purpose, until the establishment of the Court of Sewers in the reign of King Henry VIII.

Neglect was not the only cause which led to the inundation of the fens, for in the year 1335 one Roger Pedwardine was accused of having cut the sea and river banks, and thereby inundated the low country. The struggle between the waters of the sea and the protecting works of man were constant and of varied success, and many a tale of devastation and ruin could be narrated from broken banks and an inundated country. One of the earliest since the Conquest that is recorded was in 1178, when the old sea bank broke, and the whole fen country was deluged by the sea. Similar floods occurred in 1236, 1254, and 1257; & in 1287, through the vehemency of the wind and the violence of the sea, the monastery of Spalding and many churches were overthrown and destroyed. All the whole country in the parts of Holland were for the most part turned into a standing pool, so that an intolerable multitude of men, women, and children were overwhelmed with the water, especially in the town of Boston, a great part whereof was destroyed. *(Stow's Chronicle.)* Again in 1467 a very serious flood occurred, a calamity of some kind having previously been prognosticated by extraordinary appearances in the air, which are described by Ingulphus with great minuteness, and is entitled to undoubted credence from the fact of an examination having been made into the subject before no less a personage than the Lord Archbishop of Canterbury. The same historian tells us that there was scarcely a house or building but what the waters made their way and flowed through it; and this remained continuously during a whole month, the waters either standing there without flowing off or else being agitated by strong gusts of wind swelled and increased still more and more day after day. Nor on this occasion did the embankments offer any effectual resistance, but on the contrary, though materials had been brought from other quarters for the purpose of strengthening them, they proved of very little service for that purpose. However diligently the work might have been attended to in the day time, as the water swelled and rose, the spot under repair was completely laid bare during the night. *(Ingulphus.)*

A century later, in the reign of Queen Elizabeth, another serious flood occurred, on the 5th of October, 1571: owing to a violent tempest of wind and rain the whole country was flooded. An immense number of ships were wrecked on the coast. Churches and buildings were swept away, and many lives lost. At Mumby Chapel the whole town was lost, except three houses; and the church was wholly overthrown, except the steeple. A ship was driven upon a house, the sailors saving themselves by clinging to the roof; and the narrative adds to the romance by telling us that "the sailors thought they had bin upon a rocke committed themselves to God; and three of the mariners lept out of the shipe and chaunced to take hold of the house toppe, and so saved themselves; and the wife of the same lying in childbed did climb up into the top of the house, and was also saved by the mariners, her husband and child being both drowned." Holland, Leverington, Long Sutton, and Holbeach were all overflown, and many sheep, oxen, and horses were drowned. Bourn was overflowed to the midway of the height of the church. This calamity extended over many counties, and did an enormous amount of harm. *(Hollingshead.)*

At the end of the last and the beginning of the present century, several very high tides occurred which did much damage. On the 1st of January, 1779 a heavy gale of wind caused the tide to flow unusually high, doing damage in Boston and the neighbourhood. On the 19th of October, 1801, and on November 30th, 1807, high tides occurred, which flowed so high as to deluge the streets of Boston and inundate the houses; and the latter tide caused the water to rise so high as to enter the church and flow as far as the pulpit. The extraordinary high tide of the 10th of November, 1810, was attended by the most calamitous results, arising from a breach of the sea banks in several places along the coast. The following account of the effects of this tide is given by a modern writer:—

"The whole of the day was very rainy and tempestuous; the wind blew impetuously from the E S E., and gradually increased in violence till the evening, when it became a perfect hurricane. The consequences of this continued gale was, that the evening tide came in with great rapidity, and rose to an unprecedented height, being 4½ inches higher than that of November, 1807; whole streets in the vicinity of the river were completely inundated; and many parts of the town, which had hitherto escaped the effects of a high tide, were on this occasion covered to a considerable depth with water. Owing to the sea banks having given way in many parts of the neighbourhood, and an immense quantity of water having spread itself through the breaches over the adjacent country, which on the ebb of the tide had to return the same way until it reached their level, the water in the streets of Boston did not perceptibly abate for nearly an hour. The old sea banks were insufficient, and the surge dashed over them for nearly their whole extent, and in its fall secured away the soil of the bank on the land side from the summit to the base, by which means breaches were occasioned. The whole extent of country, from Wainfleet to Spalding, shared in this calamity; great numbers of sheep and other cattle were drowned; corn and haystacks were swept away, and property to the following amount destroyed: Individual losses, 16,844*l.* 10*s*; injury to public sea banks, 3500*l*; injury to private sea banks, 8000*l*.; total, 28,340*l.* 10*s*. A subscription was entered into to relieve in some degree the distresses of those who had been injured by this great calamity." *(Thompson's History of Boston.)*

The sea banks were repaired, strengthened, and heightened, and afterwards again tested by another high tide on the 2d of March, 1820, which proved disastrous to the private banks enclosing the out-marshes from Butterwick to Wainfleet, but the repairs of the old sea banks saved them from material injury. No tides so high as those last recorded have since occurred, the last extraordinary high tide happening in August, 1866, which did not rise so high as that of 1810 by three feet.

By so precarious a tenure is the fen land held, and so great is the necessity for constant and unremitting vigilance and care, that with the least neglect, only perhaps an unseen rat hole, the waving corn fields are turned into a sea of water. So important has everything that is conducive to the preservation of these banks been deemed by the Legislature of the country that in the Game Act special exception is made in their favour, and any person is at liberty to shoot or destroy the rabbits or conies found on any sea bank on the Lincolnshire coast. The laws in olden times were very stringent as to the preservation of the banks. Swine were not allowed to go upon the banks, unless they were ringed, under a penalty of one penny (equal to a shilling in our money); and in case of a breach the sheriff was authorised to impress diggers and laborers for repairing the embankments. A terrible penalty for neglect is mentioned by Harrison, in his preface to *Hollingshed's Chronicles*, who says that "Such as having walls or banks, near unto the sea, and do suffer the same to decay, after convenient admonition, whereby the water entereth and drowneth up the country, are by a certain ancient custom apprehended, condemned, and *staked in the breach*, where they remain for ever a parcel of the new wall that is to be made upon them, as I have heard reported."

Yet important as the preservation of these ramparts are to the security of the country, perhaps little thought is given by the occupier of the land as he pursues his daily calling as to how much he owes to these works of the ancient Romans. Custom makes all things common; and yet when the danger comes the sturdy independence and self help, so characteristic of the fen men, is called forth to the fullest extent.

"No one has ever seen a fen bank break without honouring the stern quiet temper which there is in the fen men, when the north-easter is blowing above, the spring tide roaring outside, the brimming tide-way lapping up to the dyke top, or flying over in sheets of spray; when round the one fatal thread which is trickling over the dyke, or worse, through some forgotten rat's hole in its side, hundreds of men are clustered, without tumult, without complaint, marshalled under their employers, fighting the brute powers of nature, not for their employers' sake alone, but for the sake of their own year's labour, and their own year's bread. The sheep have been driven off the land below: the cattle stand ranged