PART II.—PAPERS, ETC.

Somerset Drainage

BY ROBERT NEVILLE GRENVILLE, M.A.

being his Presidential Address at the Annual Meeting, Glastonbury, July 13, 1926

I HAVE been ordered to give an Address on the Somerset Drainage. This some of you may not consider to be strictly archæological, but not being a scientific archæologist myself, you would laugh at me if I attempted to address you on that subject. However, I hope to blend enough archæological lore in what I am going to say to pass muster before our ancient Society, and I will try not to bore you with a dry engineering discourse full of technicalities.

We people who live in the country have to wage perpetual war against the thorns and thistles of the curse of Adam, as far as the dry land is concerned. Not only that, but we have a constant fight in our low-lying lands against the perils of water.

It has been said that the three great obstacles to human progress are Friction, Gravity and Natural Depravity. This is undoubtedly true of drainage work: Friction caused by weeds and ill-trimmed banks which impedes the flow of water; accumulations of mud and silt in the waterways which prevent the free use of Gravity; and the Natural Depravity of human beings, who as drainage ratepayers occasionally make a hullaballoo, generally from not properly understanding the subtleties of hydraulic engineering problems and difficulties. It is the duty of Drainage Commissioners so to guide these three forces that they may become willing helpers instead of tyrannical opponents.

Not to take you back *before* Roman times—here and there all up the Severn Estuary traces are to be found of Roman work—Mr. Sanford D. Cole, in his book on *The Sea Walls of the Severn* states that the discovery in 1884 of the foundations of the Roman villa at Wemberham, close to the Yeo in North Somerset, shows that the embankments must be Roman in their origin, as the villa could not have been built in the situation in which it stood unless the water had been kept back by banks. This spot is outside the area of the Somersetshire Drainage Commissioners, but *within* their area I know of no work which could certainly be said to be Roman. No doubt in Saxon times the whole of our drainage area was one vast marsh, affording here and there a certain amount of pasturage in dry summers, but impassable in winter ; the flood water could not get off and the sea was constantly coming in on spring tides. This naturally caused an accumulation of silt all along the coast, and the floods from the rivers brought down mud from the hills, which silted up the top ends of the valleys and left that part which we now call Turf Moor an impassable morass. This was also the case in Sedgemoor and indeed in all the other moors.

There are many records of disastrous floods at the end of the fifteenth century, and in the winter of 1606–7 the whole country was under water owing to the tide having overflowed the sea walls. It is recorded that on the 20th January, 1606, this flood reached the foot of the church of Saint Benignus in Glastonbury. In 1687 and 1703 the same thing seems to have happened.

Old maps show that Stert Point opposite Huntspill used to run out to the end of Stert Island. There is a tradition that a man kept rabbits in the extreme point, and to prevent their escaping dug a ditch across his property. We read in Mr. Cole's book that in 1798 a violent storm and high tide drove the sea through a new channel which had opened in the River Parrett against the sea-wall which from time immemorial had protected the level of Huntspill. This no doubt was caused by the sea finding out the ditch, which is now something like 1,700 yards wide.

After several years' negotiation, an Act was passed in 1791

for the King's Sedgemoor and River Cary Drainage Works, which were finished in 1795, and the Cary was then made to run out at Dunball instead of into the Parrett near Burrowbridge.

There was apparently a tidal sluice at the mouth of the Brue, but in 1798 there was no barrier to the tide in the Axe, and the Axe and the Brue were connected by the Yarrow Yeo and the Mark Yeo which went by Rooksbridge and Stook House and into the Brue at the present North Drain doors.

This was no doubt an important waterway at the time of Glastonbury Abbey, and sea-borne goods were landed in the Axe, conveyed thence in boats along the Mark Yeo and up the Brue to the Abbey. This waterway is interesting, as it shows two watersheds from practically its middle length to each end, where the tide coming up from the Brue met that coming up from the Axe. This is exemplified to this day in the landward side of the Dutch and German islands in the North Sea. Those of you who know that excellent book *The Riddle of the Sands* will remember the use that Davies and Carruthers made of it in their celebrated trip to Memert.

Up to 1806 the mouth of the Brue was on the situation of the present harbour, when the Commissioners made a new cut and built a sluice on the site of the present clyse.

In 1827 the Glastonbury Canal Act came into force, the harbour was reopened and locks and sluices put at its head. I remember my father taking a party down in a barge from Glastonbury to Highbridge. We ate our luncheon under the G.W.R. bridge and got safely back to Glastonbury in the evening with our colours flying and the band playing! The Canal Basin was on the site of Messrs. Snow's timber yard.

The Commissioners' area is divided up into three watersheds, the Parrett, the Brue and the Axe. I will begin in the s. part of our district with the Parrett and its tributaries, the Ile, the Yeo, the Tone and the Cary.

The Parrett was anciently called the 'Pedred,' and up to King Alfred's time was more or less a practical boundary between Wessex and Dumnonia. Its history is full of interest, and I strongly recommend everyone to read that most excellent book by Greswell, *Dumnonia and the Valley of the Parret.*

When you drive over Bridgwater Bridge you exclaim ' What a dirty ditch ! ' but it presents a totally different appearance at 8 a.m. and 8 p.m. at spring tides, or when at low water springs the bore suddenly rushes up and alters the whole situation like magic. It is really a noble river and full of curious characteristics, but will not tolerate any nonsense in its management.

The spring tides bring up thousands of tons of silt from the Severn Estuary, which is ingeniously caught in what are called slime batches at the various brickyards for a few miles above and below Bridgwater. This is converted into ' Bath Bricks ', the only place in the world where they can be made, and are so called from the name of the inventor. The influence of the tide is felt as far up the river as Langport, to which place and to Taunton on the Tone there used to be a good trade by barges in the days of the Parrett Navigation Company. All this has now come to an end, having been killed by the railways, and the Parrett Navigation Works have been taken over by the Somersetshire Drainage Commissioners.

The Tone, by the way, was anciently called the *Tan*, and in my youth the town was always called *Tanton*, or the Town on the Tan ; but owing to the three great spoilers of English place names, the railway men, the schoolmasters, and the post office, nobody quite knows what to call it. I think the members of our Society might agree to combine and set the matter right.

Such were the conditions of the drainage up to about 1800. A scheme was prepared for making a canal and drainage works from Dunball to Yeovil, *via* Somerton and Ashington, was approved by George Rennie, and plans were made by John and Abel Easton. This however came to nothing.

The Commissioners of Sewers looked after the drainage works assisted by Dyke Reeves, consisting of local farmers looking after their immediate neighbourhoods. As there was no cohesion among them, needless to say the drainage was very inefficient. It was very much as if the permanent way of the G.W.R. was kept in order by various parish councils through which it passed—one can easily imagine what chaos and derailments would ensue. For a few dry summers everything

would go fairly well, but whenever a wet winter came a panic was started and drainage improvements were talked of.

Bazellgate and Whitehead prepared a scheme in 1829, Grantham another in 1872, neither of which was carried out. Much discussion took place, many meetings were held, and at length the Somersetshire Drainage Act, mainly the work of Mr. George Deedes Warry, was developed and passed in 1877.

In 1881 ten new District Boards were formed, namely: (1) Upper Axe; (2) Lower Axe; (3) Upper Brue; (4) Lower Brue; (5) Stockland; (6) Bridgwater and Pawlett; (7) Cannington and Wembdon; (8) West Sedgemoor, Saltmoor and Upper Curry Moor; (9) Langport; (10) King's Sedgemoor and Cary Valley; to which were added the six small existing Drainage Boards lying on the banks of the Parrett, all of which had pumping engines of their own.

The District Boards elect the Commissioners, in whom is now vested the powers of the Commissioners of Sewers. Also the rights and liabilities of the Parrett Navigation Act, and many new powers which are essential to such a body for carrying on so large and complicated a work. It took some years for the Commissioners to shake down into good working order. Naturally the knowledge of most of the Commissioners was limited to their own neighbourhood. Those who lived high up the rivers knew nothing about the difficulties of the lower parts of the rivers, those living on the sea-walls were ignorant of the wants of those who lived inland.

The first point they prepared to tackle was the River Parrett. Mr. Coombe, an engineer who lived near Salisbury, was put on the job and did much good work. Then another engineer was engaged to build the new sea-doors at Highbridge and Dunball, which works were also well carried out. When he left another was appointed for a short time and was succeeded by Mr. Lunn, who for many years did good work for the Commissioners. Mr. Lunn retired from ill health in 1920 and was succeeded by our present engineer, Mr. Haile. But still the system was by no means perfect, and when some time ago it was necessary to consult certain drawings of the works done in the River Parrett in Mr. Coombe's time they were not forthcoming. At last it was found out that on Mr. Coombe's

death all his papers, including the Commissioners' plans, had been destroyed. In view of past sad experiences, it was then determined that it was absolutely necessary for the Commissioners to have an Engineer's office of their own, where all plans and other documents should be carefully preserved. This has since been carried out, and has already amply proved the necessity of such a business-like method.

The sea-wall work has always been done by the engineer, the sea flood-banks and arterial drainage have as a rule been delegated to the District Boards, who could call in the Commissioners' engineer for advice. Sometimes they *did* and sometimes they *did not*, so now all these works are done direct by the Commissioners' engineer and no risks are allowed to be run.

The arterial drainage is also being gradually taken over, and to show the necessity of this I will give an instance. The North Drain runs almost from Wells and enters the Brue some miles below Meare. The surveyor in the Upper Brue could not get his work done owing to the *Lower* Brue Board, who had no qualified man to look after their work, failing to do their length. So it was necessary that the Commissioners' engineer should take all this over and look upon it as one work and not as two. This exemplifies my previous comparison of the G.W. Railway being kept up by the various parish councils. Any waterway must be treated as a whole and not in watertight compartments, as if you do this the compartments get more watertight than is wanted.

One only of the Drainage Commissioners' duties is to prevent floods. In a country such as they have to deal with, it is impossible always to prevent certain flooding, but if they can make the water run off in *days* instead of weeks it is as much as they can reasonably hope to effect.

Their other great, or I may say greater duty, is to see that a proper supply of water is kept up in the summer time, both for keeping fence and for cattle to drink. If this were not done the moors would be practically valueless at the time of year in which they are priceless. This can only be done by long-sightedness and co-operation. Hitherto it has been too much the custom for Brown, Jones and Robinson to put in dams

where they think they can best get the water into their fields, not caring about others whose supply they may be interfering with—although at times this may be done from ignorance, as they may not even know whence the water comes and whither it goes. This knowledge can only belong to someone who knows and understands the water from end to end—hence it is now in the hands of the Commissioners' engineer.

The main source of regulation in the Brue Valley is the 'Stoney' Sluice at Highbridge, and by marks there the height of the water is regulated to an inch for many miles up and over many thousand acres.

A 'Stoney' Sluice has now been built at Bleadon in the Axe to replace baulks which used to be put in to bay the water. These were a constant source of trouble, as it was an awkward job to manipulate them. Sometimes they would be put in too late—sometimes too early—sometimes they would leak and sometimes they would be too tight; in fact it was a thoroughly inefficient and make-shift job. Now the water can be regulated to an inch by merely turning a handle; and I am convinced that much cause of ill-will and anxiety in every form will be happily done away with. For it is a curious circumstance that the lands in the Lower Axe are at a higher level than much of the lands in the Upper Axe. The Bristol Waterworks Company put in this sluice when they got powers to pump water from the Axe at Cheddar to supply Bristol.

As before stated, in 1798 there was no barrier to the tide in the Axe, but somewhere about 1802 tidal gates were put in at Bleadon and the river was straightened and improved, thus stopping the navigation that formerly went up a considerable distance higher in this river to Rackley, near Compton Bishop. The Bristol and Exeter Railway Act of 1836 provided for the erection of tidal gates at Batch, together with a wharf in substitution of that existing at Bleadon; and as you travel between Bridgwater and Bleadon by train you can see the spot where you cross over the Axe, and very often a boat discharging coal there, which it has brought from Wales.

The river used to run near a public-house, still called 'Hobb's Boat', which antiquarians say should be Hubba's Boat. So the name 'Uphill', which has nothing to do with

going up a hill as most people imagine, really means Hubba's Pill ; for here was a favourite anchorage for that great pirate who met his death at Combwich on the Parrett in King Alfred's time. The present families who bear the name of Hobbs in the county are supposed to be descended from Hubba, also spelt Hobba, and this is borne out by many of them to my knowledge having typical Danish features and red hair. Curiously enough I was telling this yarn to our engineer, Mr. Haile, when he said : ' That is most remarkable. A boy who at times works in my garden tallies exactly with your description, and his name is Hobbs.'

I will now tell you something about sea defences.

The Commissioners' area begins at Brean Down and extends to Burnham, which part of the coast is well defended from the sea by sandhills, and thence to Stolford. Unfortunately of late there has been a great demand for sand for putting on the tarred roads, and the owners of these sandhills are doing a good trade in it. The Commissioners are keeping a sharp eye on them, and hope there will be sand enough left for some years without encroaching too much on the sea defences. Still it is a point to be watched, as we do not want a repetition of the floods of 1600 and 1700, when the sea broke in and drowned hundreds of people. From Burnham up to and above Huntspill is a stone-built sea-wall—a good strong work, but constantly needing watching and patching, which we do in concrete. Along this stretch are what are called ' Dole stones ', at all manner of irregular distances apart, from 6 feet to 20 or more. All sorts of people, houses and lands had the liability of keeping each of these little lengths in repair ; and I believe some houses even in Glastonbury were liable for a few yards here and a few yards there—so no wonder the sea used to break in, as the system was impracticable and impossible. This is all now swept away and the liabilities are commuted—the Commissioners doing all the work. This is that part of the sea-wall which is open to the north-west wind, thanks to the man who dug the ditch to keep his rabbits in.

As we go higher up the river the sea-wall becomes earthen embankments—sometimes close to the river and sometimes many yards away from it.

It is a well-known fact that a river running through a flat country not only tends to raise its bed but to increase its windings. The drainage engineer wants to keep the bed down to its proper grade and to make it as straight as he can. A notable cut was made in the Parrett in the year 1677, which formerly used to take a great sweep round, almost up to Puriton, and which is alluded to in Greswell's book as ' Viking's Pill ', a great harbourage for the Danes.

I have used the word ' Pill ' several times, and some of you may want to know what it means—all the creeks and river mouths on both sides, English and Welsh, of the Severn Estuary were very anciently called Pills. (This, I think, *is* archæological.) For example, Pill, near Bristol, at the mouth of the Avon ; at the mouth of the Axe, Ubba's Pill ; at the mouth of the Brue, Hunt's Pill, and even Pilton, between Glastonbury and Shepton Mallet.

Not long ago the mighty Parrett was making a decided effort to break into the land and increase its windings a short distance below Bridgwater. The Bridgwater and Pawlett Board, to whom this work was delegated, got into a panic and wanted to buy land to put up a new embankment further from the river. This the Commissioners would not sanction, and promptly took the work into their own hands. The best way of coming to terms with the Parrett on such a bend is to cut down the toe of the bank and fill it up with broken bricks. Above this, bags filled with earth are neatly built ; and outside all, long bundles of thorns are spiked down in the foreshore. The effect of the thorns is to catch and accumulate the mud, which soon hardens and forms a most satisfactory and comparatively inexpensive barrier. At the same time the accumulation of mud on the other side of the river, in the convex part of the bend, is eased off.

The other side of the river, being in the Cannington and Wembdon district, was taken over by the Commissioners at the same time, as each side of the river must be treated relatively to the other. This also means economy of labour and supervision and prevents overlapping, as one gang of men can attend to both sides as wanted. By these means one of the many Natural Depravities of the river itself is kept in order.

For some years before the War the Commissioners had a contract with Mr. Wills of Bridgwater to keep the river above Bridgwater clear of accumulations, by means of a hydraulic steam-boat which he designed and built. This did good work for many years, and many of us were sorry when circumstances made it necessary not to renew the contract.

Some years later our present engineer adapted an oil-driven boat, a modified form of a Saunderson weed-cutter ; not only for cutting the weeds, especially in the Tone, but also for raking the bottom of both rivers and preventing the accumulation of silt. This has proved a very good experiment, and will no doubt some day be further developed. We call this boat ' King Alfred ', as her home port is generally in the neighbourhood of Athelney.

We have also a hydraulic propelled punt driven by an oil engine on the Hotchkiss principle. This has been used on the north and south drains in the Brue District and is therefore named the ' St. Dunstan ' ; and she has given great satisfaction by keeping the mud stirred up and preventing the weeds from growing. I am convinced that the proper thing is to prevent the weeds from growing *at all*, as what you can cut for £2 takes about £6 to pull out, and pulled out they must be.

The third vessel in the Commissioners' fleet is our *magnum opus* and is called the ' King Ina ', so at any rate the Commissioners' fleet is well named both historically and archæologically. This machine consists of a pontoon with a crane working a Priestman grab. It has only been started a few months, but has already done excellent work in the Brue in grading a channel in the middle of the bed of the river, where serious shoals have long been known to exist ; the result of which will undoubtedly effect a vast improvement in the lowest spot in our area, the Edington basin. Its next job will be on the Axe, the bed of which river is badly in want of grading. ' King Ina ' has been contrived so as to be what the showman called the hippopotamus, ' an amphibilious animal ', as the crane can be taken out of the pontoon and mounted on a caterpillar carriage, which we hope to use in many places for landwork.

So much for arterial drainage. The main rhynes throughout the area are called ' in view ' or ' view ditches ', which are not classed as arterial and are entirely managed by the District Boards, who have ample powers under the Act, not only to keep them clean, but to make owners and occupiers of other ditches which lead into them keep theirs also in a state of efficiency, where there is any interference with the general drainage.

Up to the dissolution of the monasteries the waterways and drainage were probably very well looked after, and the general scheme of the drainage was very much what we work on today, St. Dunstan having no doubt engineered a great deal of it and well done at that. That straight bit of river that runs along the road between Kenward's Bridge—now, alas ! called Tootle Bridge—and Baltonsborough was his work, and is still called Dunstan's Dyke, which he made to improve the water-supply of the mill in his native village, Balsbury. This work cut off the water-supply of a tract of land in Barton, to compensate for which a certain hatch was put in and ordered to be lifted every Saturday night till Monday morning. This is in operation to this day.

It is recorded about 1261 that one Robert Malerbe was the head boatman of the Abbot. He was also the overseer of the Panborough vineyard, the conveyor by barge of the wines of that and other two vineyards at Meare and Pilton. He was the Bedel or Summoner of the outlying tythings of the Hundred of the Twelve Hides, with the duties of reeve and constable. He was also the guardian of the Fisheries against poaching and of the waterways against decay of banks and sluices. In fact, a general water bailiff and therefore the lineal ancestor of the present surveyor to the Upper Brue Board, even as a lady[1] who is in the audience is the lineal representative of Malerbe's master, the Abbot. One of his duties was to find a boat to carry eight men, to be Coxswain (Gubernator), and to convey the Lord Abbot to Meare, Brent, Butleigh, Andersey, Godney, and La Bowe (Steanbow, near Pilton), and all the Abbot's men

[1] Miss Rocke, who owns the manorial rights of the Manor of Glaston, XII Hides.

and kitchen, including the moveable kitchen gear and cooks, his huntsmen with hounds, and all else that could go by water.

After the Dissolution the land was split up ; all general supervision was lost, and naturally the drainage deteriorated both physically and administratively and the whole thing became a patchwork.

Commissioners from Henry VIII's time onwards did their best according to their lights, but when I tell you that Mr. Haile and I often travel sixty miles a day on our inspections, you will see how handicapped and parochial our predecessors must have been.

I must just say a word on the composition of the Drainage Boards. Only ratepayers have votes—and accumulative according to rateable value ; so here is one of the very few cases left in this so-called free country of representation and taxation going together, and not by counting heads. ' This latter is really a very silly way of settling anything, because heads differ so much in their contents '.

The District Boards elect representatives to the Central Board, so it is to the interest of all to get value for money, and to get work done efficiently. Which they do.

And now I think I must have drained you all dry, but I must just say that the watershed we have to look after is 949 square miles or 607,360 acres ; the flooded area being 69,072 acres or 107 square miles ; the Commissioners' total rateable area is 128,025 acres of a rateable value of £308,909, a penny rate producing £1,287.

I have done what I was told to do, and I hope you have been interested. I thank you for your attention.