

MR. S. SLOPER.

THE HISTORY OF WATER RESOURCES IN THE  
VALE OF GLAMORGAN WITH PARTICULAR

REFERENCE TO THE RIVER THAW

BY

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No person shall cast any rubbish, or any other

1. INTRODUCTION:

1.1 The river Thaw or Afon Ddawan or Ddaw as it was once referred to has a catchment area of around 124 sq. kms. The river is atypical of South Wales rivers in that it rises at a fairly low level, around 200 ft. and meanders in relatively sluggish manner through a fertile plain for a distance of approximately 9 miles. It is not "Flashy" in nature, i.e. it is not subject to a wide fluctuation in flow over relatively short periods and the marshy part of the catchment tends to defer the onset of drought flows.

Hansard in his book on Trout and Salmon Fishing in Wales dated 1834 described the stretch below Cowbridge at Llandough as "a beautiful little valley, richly wooded and abounding with picturesque scenery".

(It is interesting to note that he also described the Taff at that time as "this romantic stream").

The Thaw valley was appreciated for its fertility as early as the Bronze Age.

1.2 It is unlikely that the pattern of flow in the upper reaches will have altered markedly over the centuries for afforestation of the catchment has never played a major influential role and there have been no major discharges pumped into the system, e.g. from working mines.

The flow below Cowbridge of course has increased in line with the development of the town.

1.3 The nature and characteristics of the river undoubtedly influenced the pattern of life in the area and to a great extent the layout of the township, in the thirteenth century. Though in this respect I am surprised at the lack of fore-sight shown by the inhabitants who built dwellings near the right-angled bend in the river at High Street and sustained much damage from the flooding of the river.

1.4 The importance and value of the river Thaw and the need to protect this valuable water resource was recognised in 1610 when byelaws were introduced -

1. No person shall cast dust, dung, nor any other filth, in the streets or the town ditches.

2. No person shall drive beasts through nor cut thorns along the river without the permission of the bailiffs.

Since 1610 was also the date when the Grammar School was established, I am bound to wonder about any possible relationship between the introduction of these byelaws and the behaviour of the pupils. Vandalising 17th century style!!!

1.5 The river Thaw was and continues to be a valuable asset - a common heritage - and like so many gifts it has been subjected to use, abuse, and restoration. It is in these three shades of light as it were that I wish to consider the history of this watershed and river basin.

sixty ships plied from Aberthaw to Ireland, Tenby, Haverford and Ilfracombe in 1880.

It is thought that Cork and Tenby harbours were constructed with stone transported from Aberthaw. The establishment of Barry Dock probably contributed greatly to the demise.

2.3.1 Whilst the river water was undoubtedly used for drinking purposes, most of the potable supplies emanated from springs and wells located all over the catchment and many were used communally, e.g. at

some sections, and outside pump at Llanquish and Aberthaw. Wells were to be found in most parishes, e.g. like the Bear and Duke of Wellington and in many private dwellings. The wells were generally of the shallow type with depths not in excess of 40 ft. and were fed by ground water from the permeable strata of the immediate locality. The shallow nature of the wells rendered them susceptible to contamination from drains, cesspits, ditches and privies.

Public supplies for the inhabitants of the borough were derived chiefly from three sources:-

2. THE USE OF WATER RESOURCES IN THE THAW CATCHMENT:

2.1 The meandering character and sluggish flow of the river

Thaw facilitates the multiple use of the river and abundant evidence exists showing that over the years this was a truly multi-purpose resource.

The river has been used for navigational, water supply, agricultural, industrial, transport, and recreational purposes.

2.2 Navigation was confined to the lower and wider reaches of the river where a thriving port existed at Aberthaw.

The port was in existence long before the establishment of Barry Dock, which came into being during the period of the industrial revolution. The port was extensively used and it is recorded that over sixty ships plied from Aberthaw to Ireland, Tenby, Minehead and Ilfracombe in 1860.

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2.3 The public water supply was first piped to the Borough Dock probably contributed greatly to the demise.

2.3.1 Whilst the river water was undoubtedly used for drinking purposes, most of the potable supplies emanated from springs and wells located all over the catchment and many were used communally, e.g. at Llysworney, two at Penllyne, and roadside pump at Llanquian Road, Aberthin.

Wells were to be found in most sizeable premises, e.g. inns like the Bear and Duke of Wellington and in many private dwellings. The wells were generally of the shallow type with depths not in excess of 40 ft., and were fed by ground water from the permeable strata of the immediate locality. The shallow nature of the wells rendered them susceptible to contamination from drains, cesspools, middens and privies.

2.4 Public supplies for the inhabitants of the Borough were derived chiefly from three sources:-

- (a) Bowmen's Well located to the south-west of the town.
- (b) Silver well located in the meadow at the rear of the Bear Hotel.
- (c) An unnamed well in the Eastgate area.

Hand pumps were installed on two of these wells in 1765 at a cost of 13 guineas.

A fourth public well was sunk during the middle part of the nineteenth century and this was located at the cattle market.

2.3.2 Consideration was given toward the end of the nineteenth century to the provision of a piped water supply for the town. A Chartered Engineer in the person of Mr. H. Bertram Nichols of Birmingham actually designed a scheme which involved the pumping of water from Bowmen's Well; the installation of a 5" rising main to convey the water to a covered service reservoir located to the west; and the provision of a 4" gravity service main extending from the Tyle-Rhosyr in the west to a point near Eastfield House. The scheme was never implemented.

2.3.3 The public water supply was first piped to the Borough in 1926 and was provided by the Mid-Glamorgan Water Board from a spring at Pwllwy. Collecting chambers were installed in the vicinity of the spring which produces up to 300,000 g.p.d. During prolonged dry weather this diminishes to around 100,000 g.p.d. The water, which is very hard is abstracted from a band of alluvial gravels 45 ft. in depth. The hardness is probably due to the fact that the water, at some stage, passes through the carboniferous lime-stone.

St. Hilary enjoyed the advantage of a piped supply very early on due to the efforts of the Turnbull family. The distribution system was acquired by the Mid-Glamorgan Water Board and is now part of the main network.

2.4 The value of the river Thaw as an agricultural asset has always been acknowledged. In this connection the water has been mainly used for watering of animals, cooling, cleaning purposes and spray irrigation.

2.5 High Street was the scene of much movement. The traversing of the main highway by the river was a convenient benefit to the traveller, providing an opportunity to quench the thirst, cool the feet and later to refill the tank of the steam engine.

A new bridge, referred to as the Town Bridge was built in medieval times - a ford had previously existed at this spot. Whilst the residents valued the bridge for commercial purposes, it was considered unlucky for funeral corteges to cross in this manner. The procession of mourners waded knee high through the waters,

2.6 The Thaw Valley has never been regarded as an industrial area though certain forms i.e. agriculturally orientated industries have existed and played an important role in the prosperity of the Vale. Few industrial processes operate without water and the Thaw provided the bulk of the resource.

The business and/or industrial premises included quarries, flour mills, gas works, tanneries and breweries.

(i) Water-powered corn mills appeared to be the earliest users of the river and these were to be found at Llanblethian, Llandough, Gigan, St. Athan, The Howe and of course the Town Mill, which was first established just north of the town.

The Llanblethian Mill is said to have been the last in use, finishing during the early part of World War II.

(ii) Brewing appeared to be a thriving business and it is recorded that in 1835, the town had six maltsters - not surprising when one considers the large number of pubs in Cowbridge alone.

(iii) Smithies were commonplace and more than one tannery existed in the early part of the nineteenth century.

(iv) It is interesting to note the existence of a gas works in the town during the nineteenth century.

(v) The Cement Works was established in 1914, and is heavily dependent upon the resources of the river Kenson, a tributary of the Thaw.

2.7.1 The river and its surroundings gave pleasure to many in terms of recreation and amenity. Aesthetically it must have been a joy to behold for many stretches still retain that peaceful setting which so often fails to capture the attention of the modern traveller.

2.7.2 Wildfowl were abundant and nurtured; and the waters of the Thaw were teeming with brown trout. George Agar Hansard in his book "Trout and Salmon Fishing in Wales" dated 1834, described the river as "remarkable for the size of its trout and eels, the former sometimes caught weighing 8 lbs". Butts Pool was notorious for its fish. The pool was located in the S.W. corner of the old town wall. It was filled in in 1888.

Eel fishing was also commonly practiced on the river throughout its length.

The passage of migratory fish was impeded by the erection of dams and weirs, though the remains of what appears to have been a fish pass still exists at Abarthaw. A 12 lb salmon was reputed to have been seen swimming near the town bridge during the first world war.

2.7.3 The Grammar School, founded in 1610, had a very close relationship with Oxford University and no doubt every effort was made to emulate the customs and practices of the Colleges.

An example of this is found in the sporting activities of the pupils. The river Thaw may not have been as wide as the river Thames but that did not prevent the Thaw being used for boat racing. The boat racing took place on the river between the Poplars and the Town Mill flood gate. This stretch of river was wider in those days and the level was maintained by the flood gate. Weeds were a problem and had to be removed before races. The boats used were similar to those until recently used by Oxford University and were owned by the Grammar School pupils. In view of the lack of river width, races were conducted on a time basis in single file.

2.7.4 Whilst many an inhabitant - probably of the male sex - had no doubt used the river for bathing over the centuries, the need to provide a swimming pool was recognised in the early part of this century.

3. The swimming pool was erected in 1911. The Mayor had raised £100 toward the cost of harnessing the waters of the Thaw just north of the town. Season tickets were still being issued as late as 1930 at a cost of 2/6d. The pool was never used to the extent envisaged by the Mayor in 1911 - people found the temperature of the water too cold even in the warmest weather.

3.2 The introduction of the water-carriage system in the early part of the nineteenth century heralded the age of widespread pollution and disease. The removal of the streets and excrement by a system of cesspools and drains no doubt appeared a wise and present solution to the problems of the day. No one considered the impact of this major change upon the aquatic environment. Defective and leaky cesspools polluted the ground water which fed the wells from which people drank. Drains conveyed the sewage to the nearest watercourse and contaminated the valuable common asset.

At nearby Cardiff, two out-breaks of cholera occurred in the years 1849 and 1854, resulting in the death of 347 and 175 persons respectively. A whole spate of enactments followed in the wake of these out-breaks - Local Government Acts 1831, Sewage Utilization Act 1868, Public Health

directed toward the control of water. None of the legislation was ineffective due to two principal factors - they were administered by local Sanitary Authorities - themselves often the greatest culprits and a lack of finance.

3.3 The name of Cowbridge was associated with typhoid fever in 1853, when eight people died.

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3. ABUSE:

3.1 The water resources of the Thaw catchment in common with most other catchments throughout the country suffered relatively little damage prior to the nineteenth century.

Reference has already been made to the introduction of anti-pollution byelaws in the seventeenth century and these byelaws were obviously implemented because of the concern of the riparian owners at that time.

3.2 The introduction of the water-carriage system in the early part of the nineteenth century heralded the age of widespread pollution and disease. The removal of the stench and excrement by a system of cesspools and drains no doubt appeared a wise and prudent solution to the problems of the day. No one considered the impact of this major change upon the aquatic environment. Defective and leaky cesspools polluted the ground water which fed the wells from which people drank. Drains conveyed the sewage to the nearest watercourse and contaminated the valuable common asset.

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3.3 The name of Cowbridge was associated with typhoid fever in 1853, when eight people died.

3.4 In 1889, a certain Mr. John Spear visited the area and submitted a report on the conditions existing in the town. The M.O.H. reported that he could find nothing which would mention and on another occasion when the death rate for the quarter happened to be low, he reported that "the district was the healthiest in the kingdom".

As if pollution by sewage was not enough, the Thaw received the report of conditions in Cowbridge and the ineptitude of the Medical Officer of Health.

Mr. Spear referred to the town as covering an area of 84 acres and with an almost stationery population of 1337.

The water supply mainly from the three wells mentioned earlier was described as offensive to taste and smell, the East village well being in the immediate vicinity of cesspools and no doubt most dangerous.

Sewers were of rude construction and all drains discharged into the river Thaw at the Poplar Pool 200 yards or so from the centre of the East Village.

In the Summer the pool became stagnant and offensive. Some people of Llanblethian complained of while others drank the water. The Cowbridge Urban Sanitary District was accused of contravening the Rivers Prevention of Pollution Act by constructing a drain from the new cattle market and adding to the pollution of the pool.

"The Authority make no provision for the removal either of excrement or house refuse." Numerous references to deaths in the district from Croup, true diphtheria, gastro-enteritis, epidemic pneumonia and scarletina.

"It would appear" reports Mr. Spear, "that this Authority have never fully realised their responsibility in this matter. The inspector of nuisances is a dairyman engaged of late alternately about infected premises and in the manipulation of milk. The Town Clerk was requested to direct the Authority's attention to the defenceless position in which the town is placed.

Nothing whatever appears to have been done to ameliorate the evil conditions existing in the town. The M.O.H. reported that he could find nothing worthy of mention and on another occasion when the death rate for the quarter chanced to be low, he reported that "the district was the healthiest in the kingdom".

3.4 As if pollution by sewage was not enough, the Thaw received the discharges from maltsters, slaughterhouses, tanneries, and the gas works. Each of these contributing a substantial pollution load.

On the industrial front, however, conditions appeared to improve with time. The improvement seems to have been the result of the cessation of business activities rather than the implementation of remedial measures.

3.5 Pollution of the river and contamination of wells continued unabated and succeeding medical officers drew attention in their reports to the use of the old conservancy system; the existence of around 300 cesspools and the potential danger to health.

Following the severe Summer drought in 1933, members of the Council visited the Ministry at London and pleaded for financial assistance to instal a sewerage system. (Product of 1d rate = £22).

As more and more privies and middens were converted to water closets, the pollution of the river increased. The town drain fell into disrepair in 1943 and formed a series of stagnant cesspools in dry weather.

In 1944, the then M.O.H. Dr. D.J. Evans reported - "all drains from the town lead to the Thaw and the discharge of such a considerable amount of untreated sewage into the river, especially during periods of drought is a most serious statutory nuisance. Most of the town's drains are of the box type and the adjoining soil is sewage sick".

3.6 The unsatisfactory situation resulted in further annoyance when in 1946 on the night of 31st August, one of the severest floodings of the town occurred. Numerous houses were flooded.

3.7 The population of the town and surrounding district remained fairly static prior to World War II but following the cessation of hostilities, the population curve took an upward trend. The services, such as they were, became even more strained and the quality of the waters deteriorated further.

4. THE RESTORATION OF THE RESOURCE:

4.1 Whilst the influence that swimming had on the quality of the river water was undoubtedly insignificant, it is worthy of note that due to a combination of vandalism, operative costs, and the difficulty of regularly de-silting the pool, the facility was not officially used beyond 1952.

4.2 The Council commenced their post-war housing programme and a small estate at the Limes was established by 1948.

The significance of this comment is that it represents the beginning of the journey of restoration, for the estate was served by a new sewage treatment plant which ensured that all drainage from the estate was adequately treated prior to discharge to the river.

4.2 The second example of positive remedial action took place in 1954 when the Council resolved to refuse permission for further connections to the old town box drain.

4.3 The most substantial improvement in water quality occurred in 1956 when the Cowbridge and Llanblethian Joint Sewerage Scheme was completed. The new works at Lake Farm produced a good quality effluent and now served a population of over 4000.

4.4 The troublesome bend in the river channel at High Street was removed in 1957 when the Glamorgan River Board re-aligned the river and thereby eliminated the flooding risk to properties in close proximity. The oft referred to Poplar Pool was also removed.

In the same year consideration was being given to the implementation of proposals for a new sewerage scheme to serve St. Athan (East) and Gileston. Sewage at that time was stored in tanks on the banks of the tidal reaches of the Thaw and released on the ebb tide. The new scheme involved the provision of covered tanks with pumps operated on a Lunar basis discharging the contents to sea.

4.5 The construction of the Cowbridge By-Pass undoubtedly contributed to the escalation in population which continued through the fifties and

sixties. Cowbridge became an even more desirable place to live. This trend manifested itself in the quality of the river Thaw in that the good conditions achieved in 1956 could not be maintained. The sewage works was rapidly becoming over-loaded and plans for major modifications and extension to cater for a population of 8250 were drawn up. The modifications were completed and the river restored to "health" in 1973.

4.6 The river Thaw is now of good quality and suitable for any lawful use including agriculture, recreation and amenity.

The river supports a good trout fishery and sea-trout and mullet are regularly observed in the tidal reaches.