

The Vocabulary of Irrigation: A Typological Approach

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Abstract

Words of different origin abound in contemporary English, including the vocabulary of irrigation. English has taken over a great number of words belonging to the field of irrigation from other languages, words which have nevertheless become somehow a permanent part of it. Most of them have been modified and brought into line with the phonological rules of English, helping native English-speaking people better understand and use them. Some others, though plain English words, are confusing even to specialists: they are terms belonging to different technical fields related more or less to the field of irrigation and gathered in encyclopaedias that abound on the Internet. We present some of the terms belonging to the field of irrigation pointing out the trends in this specialised vocabulary.

Key words: *irrigation, vocabulary, typological approach*

Introduction

Words of different origin abound in contemporary English, including the vocabulary of irrigation. English has taken over a great number of words belonging to the field of irrigation from other languages, words which have nevertheless become somehow a permanent part of it. Most of them have been modified and brought into line with the phonological rules of English, helping native English-speaking people better understand and use them. Some others, though plain English words, are confusing even to specialists: they are terms belonging to different technical fields related more or less to the field of irrigation and gathered in encyclopaedias that abound on the Internet. We present some of the terms belonging to the field of irrigation pointing out the trends in this specialised vocabulary.

Material and Method

We have inventoried a number of 63 entries belonging to the field of "irrigation", as follows: ***acequia, Arthur Thomas Cotton, aryk, atmospheric vacuum breaker, backflow prevention device, Banaue Rice Terraces, Center Pivot Irrigation in Saudi Arabia, center pivot irrigation, chemigation valve, Columbia Basin Project, disk filter, distribution uniformity, double check valve, drip irrigation, drip tape, dripperline, Dujiangyan Irrigation System, emitter, Espada Acequia, Gezira Scheme, Godavari River Basin Irrigation Projects, Great Manmade River, Hazen-Williams equation, hydrozoning, irrigation, Irrigation Association, irrigation controller, irrigation scheduling, irrigation sprinkler, Kallanai, Kokee Ditch, Laramie-Poudre Tunnel, Majalgaon, media filter, microtubing, moisture stress, Natural Resources Conservation Service, Orbit Irrigation Products, Inc., permeability, pipe, pressure vacuum breaker, qanat, Rain Bird Corporation, rain sensor, rainwater harvesting, runoff, Salt River Project, sand separator, screen filter, settling basin, subirrigation, submersible pump, Sukkur, Sukkur barrage, tensiometer, Truckee-Carson Irrigation District, Vaalharts Irrigation Scheme, Valmont Industries, Inc., water filter, water hammer, water resources, water table, and water tank.***

We then compared the way all these terms are defined by the ***Wikipedia*** and by other English language dictionaries and encyclopaedias.

Results and Discussion

These entries designate a large variety of terms related to "irrigation", as follows:

- 21 types of “devices” (32%): **atmospheric vacuum breaker** ‘a backflow prevention device used in plumbing to prevent backflow of non-potable liquids into the potable (drinking water) system’ (Wi), **backflow prevention device** ‘a device used to protect water supplies from contamination’ (Wi), **chemigation valve** ‘an apparatus designed to protect water supplies from agricultural chemicals used during chemigation (the application of chemicals such as fertilizers and pesticides through irrigation water)’ (Wi), **disk filter** ‘a type of water filter’ (Wi), **double check valve** ‘a backflow prevention device designed to protect water supplies from contamination’ (Wi), **drip tape** ‘a type of thin walled dripperline used in drip irrigation’ (Wi), **dripperline** ‘a type of drip irrigation tubing with emitters pre-installed at the factory’ (Wi), **emitter** ‘a device used in drip irrigation to transfer water from a pipe or tube to the area to be irrigated’ (Wi), **irrigation controller** ‘a device to operate automatic irrigation systems such as lawn sprinkler systems and drip irrigation systems’ (Wi), **irrigation sprinkler** ‘a device used on farms, golf courses, residential yards, and other places to water crops, lawns, gardens or other plants in the event of drought’ (Wi), **media filter** ‘a type of filter utilizing a bed of sand, crushed granite or other material to filter water for drinking, swimming pools, aquaculture, irrigation, and other applications’ (Wi), **microtubing** ‘a very fine plastic tubing used in drip irrigation, typically in greenhouses’ (Wi), **pipe** ‘a hollow cylinder of material’ (Wi) and ‘a hollow cylinder of metal, wood, or other material, used for the conveyance of water, gas, steam, petroleum, etc. [before 1000]’ (We), **pressure vacuum breaker** ‘a backflow prevention device’ (Wi), **rain sensor** ‘a switching device activated by rainfall’ (Wi), **sand separator** ‘a device which utilizes centrifugal force to separate sand or other heavy particles out of water’ (Wi), **screen filter** ‘a type of filter utilizing a rigid or flexible screen to separate sand and other fine particles out of water for irrigation or other applications’ (Wi), **submersible pump** ‘a pump which has a hermetically sealed motor close-coupled to the pump body’ (Wi), **tensiometer** ‘a device used to determine soil moisture tension, an indirect measure of soil moisture content’ (Wi) and ‘an instrument for measuring the surface tension of a liquid [1910-1915]’ (We), **water filter** ‘a device which removes impurities from water by means of a fine physical barrier and/or chemical processes’ (Wi), and **water tank** ‘a tank used to store water’ (Wi);

- 14 irrigation systems (22%): **acequia** ‘a waterway used for irrigation in the USA’ (Wi) and ‘Southwestern U.S. an irrigation ditch [1835-1845]’ (We), **aryk** ‘(Turkic *arık*, Russian *Арык*) an irrigation canal widely used throughout Central Asia’ (Wi), **Banaue Rice Terraces** ‘2000-year-old terraces carved into the mountains of Ifugao in the Philippines’ (Wi), **Dujiangyan Irrigation System** ‘an irrigation system in China’ (Wi), **Espada Acequia** ‘an irrigation system in the USA’ (Wi), **Great Manmade River** ‘a network of water in Libya’ (Wi), **Kallanai** ‘a dam in India’ (Wi), **Kokee Ditch** ‘an irrigation canal in the USA’ (Wi), **Laramie-Poudre Tunnel** ‘an irrigation tunnel in the USA’ (Wi), **Majalgaon** ‘an irrigation area in India’ (Wi), **qanat** ‘a water management system in ancient Persia’ (Wi), **Sukkur** ‘a dam in Pakistan’ (Wi) and ‘a city in Pakistan’ (We), **Sukkur barrage** ‘a barrage in Pakistan’ (Wi), and **Vaalharts Irrigation Scheme** ‘an irrigation scheme in South Africa’ (Wi);

- 7 “organisations” (11%): **Irrigation Association** ‘a worldwide industry trade group for irrigation professionals and manufacturers’ (Wi), **Natural Resources Conservation Service** ‘a service in the USA’ (Wi), **Orbit Irrigation Products, Inc.** ‘a manufacturer and supplier of irrigation products for residential and commercial markets’ (Wi), **Rain Bird Corporation** ‘a large privately held manufacturer and provider of irrigation products and services in the USA’ (Wi), **Salt River Project** ‘the Salt River Valley Water Users’ Association’ (Wi), **Truckee-Carson Irrigation District** ‘a political subdivision of the State of Nevada (USA), which operates dams, canals, and drains’ (Wi), and **Valmont Industries, Inc.** ‘a manufacturer of Valley center pivot irrigation systems and steel utility poles in the USA’ (Wi);

- 5 irrigation projects (8%): **Center Pivot Irrigation in Saudi Arabia** ‘an irrigation project in Saudi Arabia’ (Wi), **Columbia Basin Project** ‘an irrigation project in the USA’ (Wi), **Gezira Scheme** ‘an irrigation project in Sudan’ (Wi), **Godavari River Basin Irrigation Projects** ‘irrigation projects in India’ (Wi), and **Salt River Project** ‘the Salt River Project Agricultural Improvement and Power District (a political subdivision of the state of Arizona), and any improvement project along the Salt River’ (Wi);

- 3 methods of irrigation (5%): **center pivot irrigation** ‘a method of crop irrigation in which equipment rotates around a pivot’ (Wi) and ‘a method of irrigation, used mainly in the USA, in which water is dispersed through a long, segmented arm that revolves about a deep well and covers a circular area [1970-1975]’ (We), **drip irrigation** ‘an irrigation method that applies water slowly to the roots of plants, by depositing the water either on the soil surface or directly to the root zone, through a network of valves, pipes, tubing, and emitters’ (Wi) and ‘a system of crop irrigation involving the controlled delivery of water directly to individual plants through a network of tubes and pipes [1970-1975]’ (We), and **subirrigation** ‘a method of irrigation where water is delivered to the plant root zone from below the soil surface and absorbed upwards’ (Wi) ‘irrigation beneath the surface of the ground, as with

water passing through a system of underground porous pipes or transmitted through the subsoil from ditches, etc. [1900-1905] (We);

- 14 other cases (22%): **Arthur Thomas Cotton** 'British general and irrigation engineer' (Wi), **distribution uniformity** 'a measure of how uniformly water is applied to the area being watered, expressed as a percentage' (Wi), **Hazen-Williams equation** 'a formula that can be used to calculate the pressure loss in a length of pipe due to friction dependent on the flow' (Wi), **hydrozoning** 'a landscape practice that groups plants with similar water requirements together in an effort to conserve water' (Wi), **irrigation** 'the replacement or supplementation of rainfall with water from another source in order to grow crops' (Wi) and 'the artificial application of water to land to assist in the production of crops [1605-1615]' (We), **irrigation scheduling** 'the process used by irrigation system managers to determine the correct frequency and duration of watering' (Wi), **moisture stress** 'stress occurring when the water in a plant's cells is reduced to less than normal levels' (Wi), **permeability** 'in soil science, a measure of the infiltration rate of precipitation into the soil' (Wi) and 'Geol. the capability of a porous rock or sediment to permit the flow of fluids through its pore spaces [1750-1760] (We), **rainwater harvesting** 'the collection and storage of rain from roofs or a surface catchment for future productive use' (Wi), **runoff** 'water from rain, snowmelt, or elsewhere that does not percolate into the ground, but flows along the surface of the earth and eventually drains into rivers, lakes, and/or oceans' (Wi) and 'something that drains or flows off, as rain that flows off from the land in streams [1850-1855]' (We), **settling basin** 'a method of removing very fine particles from water by means of gravity' (Wi), **water hammer** 'a pressure surge or wave caused by the kinetic energy of a fluid in motion when it is forced to stop or change direction suddenly' (Wi) and 'the concussion and accompanying noise that result when a volume of water moving in a pipe suddenly stops or loses momentum [1795-1805]' (We), **water resources** 'sources of water that are useful or potentially useful to humans' (Wi), and **water table** 'the upper limit of abundant groundwater' (Wi) and 'the planar, underground surface beneath which earth materials, as soil or rock, are saturated with water [1400-1450]' (We).

Of the 63 entries, only 14 (22%) can also be found in a language dictionary, which emphasises the need for specialised dictionaries developed by both linguists and specialists in irrigation: **acequia** 'a community operated waterway used in the USA for irrigation' (Wi) and '*Southwestern U.S.* an irrigation ditch [1835-1845]' (We); **center(-)pivot irrigation** 'a method of crop irrigation in which equipment rotates around a pivot' (Wi) and 'a method of irrigation, used mainly in the USA, in which water is dispersed through a long, segmented arm that revolves about a deep well and covers a circular area [1970-1975]' (We); **drip irrigation** 'an irrigation method that applies water slowly to the roots of plants, by depositing the water either on the soil surface or directly to the root zone, through a network of valves, pipes, tubing, and emitters' (Wi) and 'a system of crop irrigation involving the controlled delivery of water directly to individual plants through a network of tubes and pipes [1970-1975]' (We); **emitter** 'a device used in drip irrigation to transfer water from a pipe or tube to the area to be irrigated' (Wi) and 'a person or thing that emits' (We); **irrigation** 'the replacement or supplementation of rainfall with water from another source in order to grow crops' (Wi) and 'the artificial application of water to land to assist in the production of crops [1605-1615]' (We); **permeability** 'in soil science, a measure of the infiltration rate of precipitation into the soil' (Wi) and '*Geol.* the capability of a porous rock or sediment to permit the flow of fluids through its pore spaces [1750-1760] (We); **pipe** 'a hollow cylinder of material' (Wi) and 'a hollow cylinder of metal, wood, or other material, used for the conveyance of water, gas, steam, petroleum, etc. [bef. 1000] (We); **runoff** 'water from rain, snowmelt, or elsewhere that does not percolate into the ground, but flows along the surface of the earth and eventually drains into rivers, lakes, and/or oceans' (Wi) and 'something that drains or flows off, as rain that flows off from the land in streams [1850-1855]' (We); **subirrigation** 'a method of irrigation where water is delivered to the plant root zone from below the soil surface and absorbed upwards' (Wi) 'irrigation beneath the surface of the ground, as with water passing through a system of underground porous pipes or transmitted through the subsoil from ditches, etc. [1900-1905] (We); **Sukkur** 'a dam in Pakistan' (Wi) and 'a city in Pakistan' (We); **tensiometer** 'a device used to determine soil moisture tension, an indirect measure of soil moisture content' (Wi) and 'an instrument for measuring the surface tension of a liquid [1910-1915]' (We); **water hammer** 'a pressure surge or wave caused by the kinetic energy of a fluid in motion when it is forced to stop or change direction suddenly' (Wi) and 'the concussion and accompanying noise that result when a volume of water moving in a pipe suddenly stops or loses momentum [1795-1805]' (We); **water table** 'the upper limit of abundant groundwater' (Wi) and 'the planar, underground surface beneath which earth materials, as soil or rock, are saturated with water [1400-1450]' (We); **water tank** 'a tank used to store water' (Wi) and 'the planar, underground surface beneath which earth materials, as soil or rock, are saturated with water [1400-1450]' (We).

Conclusions

It is interesting to note that, of the 64 meanings, only 75% are strictly related to the vocabulary of irrigation (the 21 types of devices, the 14 irrigation systems, the 12 of the 14 'other cases', and the 3 irrigation methods), while the remaining 25% are dedicated to 'organisations' or to irrigation projects. This pragmatic trend, the direct result of the fact that **Wikipedia** is 'the free encyclopaedia that anyone can edit', speaks not only of sponsorship, but also of the need for more than just 'words'.

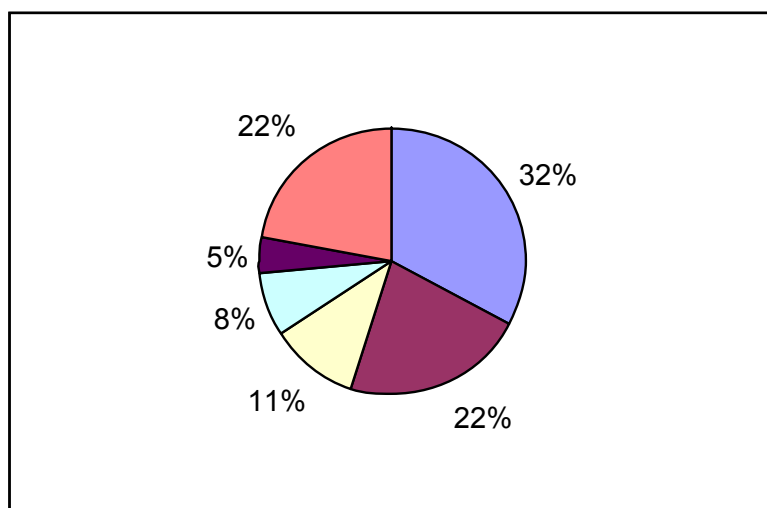


Figure 1. Share of the terms specific to the English of irrigation: 21 types of "devices" (32%), 14 irrigation systems (22%), 7 "organisations" (11%), 5 irrigation projects (8%), 3 methods of irrigation (5%), 14 other cases (22%).

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