Annual Report from the Virginia Department of Health - 1911

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Blacksburg, population 875, 28 January 1911 Report, Public water supply system "now being installed" and "public sewerage system"... "now being installed." page 67

Report of the State Commissioner of Health (Transcribed by Jody Booze-Daniels, 25Sept2021)

Blacksburg
Investigation January 9, 10, 1911
(pages 69-75)

“Blacksburg has a population of about 600 white and 200 colored, a total of 800. Immediately adjoining the town is the Virginia Polytechnic Institute with about 500 students. The institute is practically separate, having its own grounds and buildings, dormitories for students and residences for the faculty. The geological formation of the whole territory is limestone.

Water Supply- Blacksburg at the present has no common system of water supply. The residents depend upon the various wells and springs, of which there are about a hundred scattered through the town. In the eastern part of the town there is a large spring from which water is conveyed through a two-inch wrought iron pipe. This supplies the hotel, the school and several houses along Main street. This pipe has been in use for several years, and is probably seriously rusted. The yield from the spring, known as Palmer's spring, is said to be from fifty to eighty gallons per minute. The difference in elevation between the town and the spring is not sufficient to give adequate pressure for fire protections, even if there were a suitable main to supply the water.

Sewerage.- The town has no system of sanitary sewers. The investigation showed a great many unsanitary privies, which are seldom, if ever, cleaned out, and several of which are built over Stroubles creek, flowing through the center of town. Several residences which are supplied by the two-inch pipe from Palmer's spring have installed plumbing fixtures and discharge their sewerage into cesspools. The underlying rock is limestone, and is generally only a few feet under the ground surface, the top soil being of heavy clay. As a result, most of these cesspools extend down into the limestone and the sewage is supposed to be carried away through fissures and passages which always exist in a limestone formation. In one particular instance, the cesspool was extended down until an underground stream was reached, and since then there has been no further trouble in getting rid of the sewage discharged into it. Another instance, and perhaps the worst that this department has ever come across, is the cesspool on the hotel premise which was formerly a well forty feet in depth. When plumbing fixtures were put in, water was taken from the two-inch line and the well then changed into a cesspool. Several instances were discovered where the sewage was discharged directly into the creek.

It is exceedingly difficult to make any statement about the sanitary quality of a water from a limestone spring or well, even where the possibility of pollution seems remote. The underground flow of water is through the fissures and passages made by the gradual solution and removal of the rock by the passing water. Consequently limestone waters are not well filtered. To a large extent they are subject to contamination from the entrance of whatever polluting materials there may be on the tributary area. The spring which appears from the limestone rock may be the same stream which runs through a neighboring back yard, or though a leaky cesspool. Most of the privies in Blacksburg have seldom been

cleaned out' the night soil rests upon the ground, contaminating the surface water which, then finding its way through cracks in the rock, mingles with the water below.

Under these conditions it was no surprise to find that cases of typhoid fever had already been traced to several springs in the town, one of which in particular had formerly supplied water to the public school. The investigation showed one large spring on the Hoge property near Main street which is still used regularly by about one hundred people. Several families in the neighborhood carry water daily to their homes in buckets. At the meeting of several societies, Masons, Odd Fellows, etc., the water drunk is brought from this spring, outcropping from limestone and the center of a district where there are many privies and several cesspools.

It will be objected that this spring and others have been in use for many years without bad results following, possibly; but it must be remembered that sometimes water polluted from healthy sources may for a time be quite harmless, until the cesspool and then the spring receives infected sewerage and an outbreak of epidemic disease compels attention to the polluted water. Records show that there have been many epidemics in towns where the conditions for pollution of the drinking water were not so favorable as in Blacksburg at the present time. Therefore, it is not unreasonable to assume that unless conditions are immediately remedied, the town of Blacksburg will have a severe outbreak of disease that will be fatal and costly in its effects.

The lines of defense to prevent an epidemic of typhoid fever are as follows:

1. No water should be used for drinking purposes from wells and springs in the town. Such wells and springs shall be condemned by the town authorities. This does not apply to the two springs in the extreme eastern limits of the town, one of which is known as Palmer's spring. These waters are probably pure as the surroundings seem to indicate the changes of pollution remote.
2. All privies should be put in a sanitary condition according to the special regulations of the State Board of Health, adopted July 13, 1910 and effective January 1, 1911. The manner of constructing sanitary dry closets has been described in several bulletins issued by this department.
3. Under no considerations should sewage be discharged or emptied into a cesspool vault or tank which is not water-tight or fly-proof. This applies to all cesspools built in limestone rock not having a concrete floor and concrete walls which are water-tight.

The safest, most practicable and economical solution of the whole problem is a system of water supply and sewage for the town. Necessarily the question of the expense involved arises. The investigation showed that the Virginia Polytechnic Institute has an independent supply for its different buildings, pumped from a large spring west of town. The average yield of this spring is said to be about 400 gallons per minute, equal to 576,000 gallons per day. Assuming the average consumption to be fifty-seven gallons per capita daily, the source is sufficient to supply 10,000 people. The elevated steel water tank with a storage of 60,000 gallons gives adequate pressure for fire service. The six-inch cast iron main from the tank supplying the institute buildings and fire plugs extends to a point 400 feet from the corner of Collage avenue and Main street practically the center of the town.

A few years ago the institute made a proposition to the authorities to extend the distribution system into the town and give the citizens the advantages of a good supply of water as well as fire protection. For some reason the proposition was not accepted. The expense of laying the necessary pipes would be small as compared with the benefits derived from a safe water supply, and if some satisfactory

arrangement can be made with the institute whereby the town will bear its just proportion of expense in operation of pumps, etc., the water problem will be solved.

The department of health strongly recommends that a committee be appointed to take this matter up with the institute and get plans and estimates of cost, etc.

Sewerage. – In a limestone region, especially where the top soil is an impervious clay, there is no satisfactory or practicable method known to the department for the purification of liquid sewage by individual disposal plants without causing some nuisance and danger to the people in the vicinity. The town of Blacksburg needs a system of sanitary sewars to take the place of dangerous cesspools which are now in common use. Virginia Polytechnic Institute now has such a system. Along College avenue, beginning at a point about 700 feet west from Main street, an eight-inch line conveys the sewage to a septic tank which has been in use since 1902. This line of sewer is laid with sufficient grade to carry all the sewage from the institute and town combined. The expense of laying the necessary lines of pipe to connect with this system and serve most of the residences in Blacksburg would be small as compared with the conveniences and the doing away of the present nuisances and at the same time in preventing a serious outbreak of disease. The institute no doubt would consider any reasonable proposition by the town to acquire the use of its sewerage system.

The department of health strongly recommends that a committee be appointed to consider the matters relating to the installation of a system of sanitary sewer.

At the meeting of the council some doubt was expressed as to the powers of the State Board of Health and the public health laws as they apply to various communities. The investigation showed:

1. That there are many wells and springs which are in constant danger of pollution, and as such constitute a danger to public health, these springs should be condemned.
2. That there are a great many unsanitary privies in the town. A privy or dry closet in which the compartment contains the excrement is not water tight or fly proof, or in which the excrement is not removed and buried at least once a month is defied by the State Board of Health as a nuisance.
3. That there are a number of leaky cesspools which in a limestone formation are especially dangerous to public health. A cesspool vault or tank containing sewage and not water-tight is defined by the State Board of Health as a nuisance.

Powers of State Board. – (Page 87, Public Health Laws 5). “The state Board of Health shall have the power to appoint three regularly licensed physicians of each county or corporation, who shall, with the chairman of supervisors or the mayor of the corporation, as the case may be, constitute a county, *town* or city board of health; provided, however, that where the charter of any city or *town* already provides for the creation of a board of health, the provision of this section *shall* not apply.” Most towns have some provision in the charter for the appointment of such a board to consist of the number of members desired, and probably Blacksburg has. If there is no such provision the State board may appoint such a board of health.
Such a local board has power to adopt and enforce such reasonable rules and regulations deemed necessary to suppress nuisances , to control or eradicate contagious and infectious diseases and other powers clearly described by the public health laws (8, page 89). The secretary of such local board shall

act as executive or health officer for the town, and have certain powers as stated. He shall receive such compensation as the council of the town may deem proper.

General and Enumerated Powers of Councils of Cities and Towns (See 1938, p. 99) – "In addition to the powers conferred by other general statues the council of every town shall have power to prevent injury or annoyance from anything dangerous, offensive or unhealthy and cause any nuisance to be abated, etc. For carrying into effect these and their other powers, they make ordinances and by-laws, and prescribe fines or other punishment for the violation thereof, keep a city or town guard, appoint a collector of its taxes and levies and such other officers as they may deem proper, define their powers, prescribe their duty and compensation."

Proposed Ordinance

1. No part of the contents of any privy, privy vault or box, sink or cesspool shall be removed therefrom or transported through any street, alley or other public place of the town of Blacksburg except as the same shall be approved by the board of health of the town of Blacksburg, and under such rules and regulations as shall be adopted by said board of health, so as to prevent the contents from being unduly exposed to the open air during the process of removal and to insure regular, prompt and efficient removal thereof.
2. For the protection of the health of the citizens of Blacksburg, the boar of health, shall as soon as practicable after the passage of this ordinance, adopt rules and regulations governing the constructions and maintenance of dry closets in the town of Blacksburg in sections as are not accessible to a system of sanitary sewers. Printed copies of said rules and regulations shall be distributed to all premises in the town on which are located dry closets, said printed copies to be furnished by the board of health. From and after thirty days from the publication of said rules and regulations, it shall be unlawful for the owner of any occupied house in the town of Blacksburg to have on his premises any dry closets not constructed in conformity with said rules and regulations, and it shall further be unlawful for any occupant of said premises to maintain such dry closets in a manner not in conformity with said rules and regulations, and any person violating any of the provisions of this section shall be liable to a fine of not less than fine or more than twenty-five dollars, recoverable before the police justice of the town of Blacksburg.
3. The board of health, shall, as soon as practicable after the approval of this ordinance, adopt such rules and regulations as they may deem wise governing the disposal of sewage or liquid wastes from any premises in the town of Blacksburg, as are not accessible to a system of sanitary sewers. From and after thirty days from the publication of said rules and regulations it shall be unlawful for the owner of any occupied house in the town of Blacksburg to construct or maintain on his premises any cesspools, vault or tank for reception of sewage or liquid wastes which are not water tight and fly proof.
4. The board of health shall, as soon as practicable after the approval of this ordinance, adopt such further rules and regulations as it may deem wise to effectuate the objects of this ordinance."

"Proposed Rules and Regulations Governing the Construction and Maintenance of Dry Closets in the Town of Blacksburg" (pages 73-75 and not transcribed.)

Town Spring given to the town by Mr. John B. Goodrich, “16-foot square enclosure near Water Street,” 1828 deed (McNeil, R.B., “Old Deeds Tell A New Story”, *The Smithfield Review*, Vol IX (2005), p. 43). The Baptist church is in the background, located at the corner of Water (Draper, Roap, Rope) Street and Roanoke Street. The white house to the right faces on Main Street and was referred to as the Twin House.

Palmer's Spring may be the same as Spout Spring. Spout Spring lays at the corner of Clay and Wharton Street. Freshwater Heritage Report describes the water heritage of Blacksburg in this report.