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OUR WATER RESOURCES

6. WATER QUALITY

Previous articles on our water resources have dealt chiefly with measurement of stream flow and the development of water power. The collection of accurate data relating to the power producing capacities of our streams is clearly of economic importance, and bears a direct relation to the industrial growth of the state. The quality of our surface waters is a less spectacular subject for discussion, but it may be shown that this too should be a matter of public concern from materialistic standpoints of attractiveness to industry and growing urbanization.

Quality Defined

First, let us define water quality. To do this we must state the use to which the water is to be put. Is it to be used in manufacturing, or is it to be used as a public water supply, or is it to be used for both purposes? The manufacturer usually wants a cheap, clear, soft, colorless water. The municipality would like this too, and in addition wants it pure. These five requirements are practically never found together in surface waters of the Piedmont and Coastal Plains regions, and rarely are any two of them found together. Yet most of our largest cities are in these regions, and they are all provided with a water supply that is satisfactory for drinking purposes. How is this provided for?

Treating Waters

Fortunately we do not have in North Carolina any surface waters which are very "hard", that is which contain large amounts of calcium or magnesium in solution. Our surface waters of the Piedmont usually carry sediment in suspension and are to some degree polluted with drainage from human habitations. In the Coastal Plains district the waters are usually colored from organic material from swamps. Neither color nor sediment is harmful in drinking water, but we will not drink water so affected, and it must be removed. Consequently every large town and city in the Piedmont or Coastal Plains region treats and filters the water from any surface source which is used for domestic supply. This treatment and filtration makes the water free from color, sediment, and pollution, and renders it attractive and safe to drink.

Need Soft Clear Water

Manifestly it costs money to produce a clear, colorless, and safe water for domestic use in our Piedmont and Coastal Plains cities. The manufacturer who uses large quantities of water does not want to pay excessively for it. Moreover, the treatment process changes the chemical composition of the water and makes it less satisfactory for use in boilers and for general industrial uses than the untreated water. For these two reasons large industries located in the Piedmont and Coastal Plains cities usually have an independent private source of water supply which they use for manufacturing purposes. Even these untreated surface waters however are too "hard" for satisfactory use in many of the newer industrial processes developing in North Carolina, such as dyeing, artificial silk manufacture, paper and tannery manufactures, bleaching, etc. For these purposes an extremely soft water is needed. Hence, where such industries are located in the Piedmont region they generally have to equip themselves with apparatus to soften the water they use, and this of course costs money. In the Coastal Plains region the surface waters are often soft, but they are highly colored, and the removal of the color introduces added costs in order to produce a clear, soft water for manufacturing uses.

Western Carolina Supreme

In western North Carolina the surface waters are clear, usually practically colorless, usually much less contaminated than waters to the east, and, best of all for industrial purposes, they are extremely soft and usually require no artificial treatment of any

kind for use in even the most delicate manufacturing process. Moreover, these are generally mountain waters and can be piped direct to the manufacturing establishment without requiring the expense of pumping. Consequently the manufacturing establishment requiring a clear, cheap, colorless, soft water can get it best in western North Carolina, and such waters are to be found there more abundantly and of better quality than almost anywhere else in eastern United States. By the same token, the municipality in western North Carolina can get this same kind of water, and not having to pump it (and often not having to filter it) is in a splendid position to offer strong inducements to industries. The combination of cheap power, cheap and excellent quality water, and cheap labor should make western North Carolina extremely attractive to industries whose requirements as to water supply are difficult to meet.

Exhaustive Survey Is Needed

The State Geological Survey (now the Department of Conservation and Development) began some time ago a thorough investigation into the chemical quality of the surface waters of the state, because this was known to be of such importance to manufacturers. In cooperation with the Schools of Engineering and Chemistry at the State University, the United States Geological Survey, and Western North Carolina, Inc., a rapid survey of the surface waters of western North Carolina is being completed, and the results will be published in a bulletin. Later, as funds become available and data are collected, a more extensive publication will be issued, giving authoritative information upon the quality of surface waters over the entire state.—Thorndike Saville.

NOTED VISITORS

Three visitors of more than ordinary prominence—Governor Whitfield of Mississippi, President Melton of the University of South Carolina, and William Allen White, the Kansas editor, left here today to return to their respective states, and before going they granted interviews that told of impressions of North Carolina and its University as gained from their visit here and elsewhere in the state.

All three expressed the greatest admiration for the state—its people, its good roads, its educational progress, its industrial growth and other signs of greatness, but what seemed to impress them most was the state's ability to do even greater things in the future.

Governor Whitfield

Governor Whitfield, Mississippi's chief executive since the first of the year and elected to the position over the machine candidate, came to North Carolina for the sole purpose of studying the methods employed in solving the social and industrial problems of the state. Governor Whitfield is now engaged in a study of Mississippi's problems, and he wanted to see how North Carolina had solved them so well. He wants his state to completely reorganize its social and industrial program. He presided over one of the sessions of the executive Conference of the Southern Social Science Teachers and took an active part in all sessions, remaining here several days. He visited Governor McLean in Raleigh and brought back some fine stories about the North Carolina executive.

Governor Whitfield came here to learn for the benefit of his native state, and he says he is carrying back home some stories about progress that are destined to stir Mississippians to action.

President Melton

President Melton, head of South Carolina's University, found the state institution here at Chapel Hill so much to his liking that he would put it above everything else in the South, and in making the remark he recalled that he was an alumnus of Virginia. He was firm in the belief that the University

THE KEY

The community's duty to education is its paramount moral duty.

By law and punishment society can regulate and form itself in a haphazard and chance way. Through education society can formulate its own purposes, can organize its own means and resources, and can shape itself with definiteness and economy.

It is the business of every one interested in education to insist upon the school as the primary and most effective interest of social progress.

The art of giving shape to human powers is the supreme art.—John Dewey.

of North Carolina is making progress along the right lines, and he could foresee no backward step. North Carolina's university, he said, is already largely recognized as a model by other institutions in the South.

William Allen White

William Allen White finds North Carolina to be the "fruitage of the new South." After enumerating what he considers the state's many advantages, he added:

"You will have the greatest industrial civilization in the world, if only you have sense enough to keep your educational development going so that when the tremendous industrial problems come up, as they must arise here in the next two decades, you will have a wise electorate to consider the questions and will not be fooled by the demagogues that appeal to the bill bills like those of South Carolina nor the demagogues who inflame the passions of the Rotarians and chambers of commerce like the plutocratic demagogues of Florida.

"Education will create a public opinion which will establish justice. And unless you do conduct your civilization here justly, it will not prosper in the long run. An educated voter is the only salvation of the North Carolina situation. Without it you will have seasons of political confusion and calamity that will make all the fruits of your prosperity ashes in your hands.

"You have here one of the finest universities in the country. It is and should always be the common center of culture radiating to all parts of the commonwealth. And the best thing about it is that it is free to search for truth.

"You have here in North Carolina the fruitage of the new South. For forty years, ever since Henry W. Grady detected signs of new life in the South, that life has been slowly blossoming. But here in North Carolina, here particularly in the industrial region from Raleigh to Greensboro, Winston-Salem, High Point, Charlotte,—is the first fruit of a new order. It is an industrial section unhampered by the bad traditions of the 19th century. Of course the North Carolina region has many bad customs brought from England. But they are not rooted here. Here change for the better may come without serious injustice to anyone and the new South will be able to work out its problems long before New England.

Educated Voters

You have more things in this North Carolina region that will make a good civilization than any other state of the South or West has. You have a good all the year climate, enough rain, fertile soil, when it is wisely cropped, a diversity of possible crops, vast water power—which by the way you should control absolutely—and a commercial position such that with just railroad rates you can put your produce and manufactured goods into the Eastern cities, the Western farms, and the Northern markets for fruit and vegetables at a distinct advantage over any other state of the Union.

"When your idle land is reclaimed, your acres planted wisely and your water power harnessed equitably, you will have the greatest industrial civilization in the world if only you have educated voters."

DOES NORTH CAROLINA READ

LITERARY MAGAZINES

From preceding articles that have appeared in the News Letter it has been shown that in reading 47 magazines of national prominence, having a combined circulation of 26,628,797, there are great differences in the reading proclivities of the various states, with the people of some states reading nearly seven times as extensively as those of others.

Where We Rank

The circulation of the 47 magazines gives an accurate cross section of the reading propensities of different states and although the data on reading included the circulation of only 47 prominent magazines, these magazines have a nation-wide circulation, and the relative rank of the states would be affected at most only slightly if all printed matter, books, magazines, newspapers, and miscellaneous publications, were considered. In the ratio of the number of copies of magazines circulated to population North Carolina ranks 43rd in reading the 47 magazines, 43rd in reading women's magazines, 43rd in reading general magazines, 43rd in reading national weeklies, 41st in reading "class" publications, and 44th in reading "literary magazines."

Our Rank Forty-Fourth

To come at the study from a slightly different angle, it might be interesting to note the relative position of North Carolina and the other states and geographic areas in reading what some call the literary magazines. It might be said that magazines cannot be definitely classified, as no distinct line of demarcation can be drawn between many magazines.

The table below gives the rank of states in reading the so-called "literary magazines." It is self-explanatory. California ranks first with one copy in circulation for every 14.30 inhabitants, and Mississippi comes last with one copy for every 107.75 inhabitants. North Carolina ranks 44th with one copy for every 72.19 inhabitants, while the average for the United States is one copy for every 35.09 inhabitants.

The Far West Leads

The Far West easily outranks other sections of the country, it being noted that the first six states are western states. The New England states rank second; then come the Mountain, Middle Atlantic, and Middle Western states, respectively, and the South brings up the rear. The people of the Far West read about forty percent more than those of New England and

Mountain groups, about twice as much as those of the Middle Atlantic and Middle Western states, and about four times as much as the people of the entire South.

In looking over the table one wonders at some of its revelations. The people of California read seven and one-half times as much as those of Mississippi, and five times as much as those of North Carolina. Does California's state-wide system of county libraries explain or help to explain her high rank? Florida, a Southern state, occupies a position far above that of her neighbors, ranking 17th, while West Virginia, the next highest Southern state, ranks 35th.

Quantity and Quality

It is important to know that there are differences, great differences, in the quantity, and also perhaps in the quality, of reading habits of people of different states, or of groups of states. North Carolina ranks 44th in reading "literary" magazines, but 37th in the reading of the True Story type of magazine! It is well for educators, statesmen, and public-spirited citizens to notice that the people of some sections read very little in comparison with people in other sections. Unquestionably reading is the greatest of educative forces, for it is applicable to all ages, areas, and seasons. Through it the great masses are reached; through it people become more interested in industry, more interested in public affairs, and more competent to carry on, as Homer calls it, the battle of life.

North Carolina ranks low as a reading state and we must begin at once to improve our habits and our standing among the states of the Union.—Orlando Stone.

TOBACCO TAXES

North Carolina tops the list of states in the amount of internal revenue taxes paid on cigarettes both in 1923 and 1924, likewise as to manufactured tobacco, and in the total of tobacco and tobacco manufactures' tax. The Internal Revenue Bureau issued today a comparative statement which shows that in the calendar year 1923 the cigarette tax paid by North Carolina was \$110,050,175, and in 1924 it was \$117,951,009.

The manufactured tobacco tax for 1923 was \$20,554,474; for 1924 it was \$21,332,982.

The total tobacco and tobacco manufactures' tax in the state for 1923 was \$131,062,426, and in 1924 it was \$139,852,883.

In 1923 the cigar tax for the state was \$92,296, while in 1924 it was \$117,317.

In 1923 the manufacturers' special tax on cigarette papers and tubes, was \$365,480; in 1924 it was \$451,573.

DOES NORTH CAROLINA READ

Distribution of Literary Magazines in 1924

The following table, showing the rank of the states as readers of eleven leading so-called "literary" magazines, is derived by dividing the total 1924 circulation of these magazines in each state by the 1920 census of population.

California leads with 14.30 inhabitants per literary magazine, and Mississippi comes last with 107.75 inhabitants per literary magazine. North Carolina ranks 44th with one literary magazine coming into the state for every 72.19 inhabitants.

U. S. average, one literary magazine for every 35.09 inhabitants. The magazines upon whose circulation this study is based are: American Review of Reviews, Atlantic Monthly, Century, Collier's Weekly, Current Opinion, Harper's Magazine, Independent, Literary Digest, Outlook, Scribner's Magazine, and World's Work.

Orlando Stone, Research Fellow
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Rank	States	Inhabitants per Magazine	Rank	States	Inhabitants per Magazine
1	California	14.30	25	Nebraska	54.00
2	Washington	20.16	26	Indiana	54.05
3	Oregon	20.33	27	Iowa	54.17
4	Nevada	20.98	28	Wisconsin	54.27
5	Wyoming	22.31	29	Illinois	55.23
6	Colorado	22.65	30	Delaware	55.77
7	New Hampshire	24.23	31	Maryland	55.95
8	Connecticut	24.854	32	Kansas	59.98
9	Massachusetts	24.857	33	Missouri	44.46
10	Maine	26.69	34	South Dakota	46.76
11	Ohio	28.15	35	West Virginia	48.96
12	Vermont	28.35	36	Virginia	49.21
13	New Jersey	29.94	37	Texas	54.29
14	Idaho	30.05	38	North Dakota	56.01
15	Utah	30.65	39	Oklahoma	57.38
16	Michigan	30.66	40	Louisiana	57.73
17	Florida	30.71	41	South Carolina	67.28
18	Rhode Island	31.09	42	Kentucky	68.65
19	Montana	31.12	43	Tennessee	70.23
20	New Mexico	31.14	44	North Carolina	72.19
21	Arizona	31.69	45	Alabama	74.20
22	New York	31.87	46	Arkansas	88.05
23	Minnesota	32.87	47	Georgia	98.12
24	Pennsylvania	33.48	48	Mississippi	107.75