

[A. E. Harley, Civil Engineer]

26027

March 29, 1939.

A.E. Harley, C. [E.?)

Room No. 1.

Durkee Bldg.,

Bay & Newman-sts.,

Jacksonville, Florida.

Rose Shepherd, Writer.

A.E. [HARLEY?], CIVIL ENGINEER.

It was raining, and the low-hung clouds made the stairway and corridors of the old Durkee Building dark, as I turned the knob on the door of Room No. 1 at 2p.m. A dim light shone through the glass upper half. Obtaining no response, I took a turn the length of the corridor and returned, trying the door again. "Come in," said a voice, and I slightly shook the knob to show that the lock was on.

At this, the door was opened by a slight man, with lined face, faded blue eyes, and thin graying light hair. In answer to my question asking if he were Mr. [Harley?], he said: "Yes, I am Mr. Harley." and continued to hold the door open about six inches. I explained I was interviewing some of the more prominent citizens relative to unrecorded history of Jacksonville and important events in their lives. He answered that he would not be

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an authority on history, and nothing important had ever happened in his life. Nothing daunted, I then told him I was trying to locate a rather remarkable topographical map of Jacksonville of the 1880's. I understood he had a valuable collection of Florida maps of different periods, and thought he might be able to help me identify this particular map, or perhaps he might have a copy.

“Come right in. I am pretty busy and haven't much time to spare, but I'll talk to you for [affew?] minutes.”

And so the door opened wide and I entered a room, the most prominent equipment being a large sixed drawing board, immaculate 2 in its neatness - a new cover of light wrapping paper having been recently adjusted with thumb tacks - and in the center a squat lamp, its metal shade pulled almost to the bottom of the single small bulb, gave the dim light I had seen reflected through the door. An old-fashioned wicker armchair and two straight chairs were in a row along the east wall of the long room, which faced the north where two long uncurtained windows looked out on [May?] Street. All the chairs were filled with sightly rolled maps and blueprints. On the floor, more maps, more blueprints in stacks between the chairs. With the exception of two high cushioned stools flanking each side of the drawing board, there was no other furniture. The walls were lined with maps of Florida.

“You have a large collection of maps?” I ventured.

“Yes, [rawthah,?]" he drawled - “About \$2,000 worth. Now, here is an old map,” he said pointing to one on the west wall, and speaking eagerly: “It was drawn by Brigadier-General Bernard, Engineer, U. S. A., and member of the Board of Public Improvement, and you will notice it bears the date of 1829, with the legend 'map of Florida from Northern Boundary to Latern 27 degrees 3'. Even at that early date, the government and the people of Florida were interested in a cross-state canal. You will observe on this map two proposed routes are indicated:

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“The first, up the St. Johns from the ocean, through Black Creek to the Santa Fe River and into the St. Johns.

“The second, through the St. Mary's River, across the Okefenokee Swamp, and almost due west to Port St. Joe and the Gulf of Mexico.

“These are the first recorded records of efforts to obtain a ship canal through Florida.

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“Bargo canals are no longer popular. The least depth of water possible for an efficient intracoastal waterway is eight to ten feet. A ship canal would have to be deeper. In the early days, shipping interests and private yacht owners were satisfied with five or six foot depth to a barge canal, but now even these have to be deeper.

“You have read my article in the Florida Historical Society [Quarterly?] about Florida maps, and the early Spanish map of 1763, which is in my collection?”

I told him I had, and considered it very scholarly and quite enlightening.

“Now here is a map which will finally become customary and will be extensively used - serial maps or maps from the air - because they show detail so perfectly. In all old style maps, there is always the question as to their accuracy: if they are not accurate, they have no value.”

Here he picked up an serial photograph of a subdivision in the suburbs of Miami, taken from an airplane several hundred feet up, size about twelve by fourteen inches.

“See this little white cross over on the north?” he questioned, indicating a white mark about an eighth of an inch. “Well, that is a cross made by tying two forty by forty yard sections of unbleached calico muslin; and opposite, just adjoining this roadway, you will see another white cross made in the same manner. Between those two crosses is exactly one mile.

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This picture with this unit of measurement gives us the scale from which a map of the section can be drawn with the greatest accuracy as to detail shown by the view. The roads, highways, or railroad tracks offer the most convenient & system of boundaries on which to establish markers.

“Map making changes in style ever so often. By the way, did you notice in the 1829 Florida map how the engineer drew little [neat?] four-limbed trees with tent-like tops to indicate the forest sections of that period, and the shaded white portions to portray the shores and barren regions? That was the style in those days.

“The [Bemis?] map you are looking for was a little before my time - I became City Engineer of Jacksonville in 1890.

“Yes, I am a native of England, where I was born sixty-odd years ago, and where I received my education and training.

“I came to America in 1886, going first to Ohio, where I received strenuous training in American methods, which I /will tell you about later on.

“After a year in Jacksonville, I went to work for a railroad company of Texas, which was doing some pioneer work, but came back to Jacksonville in 1891, first as assistant, then finally city engineer, where I remained until practically 1898. During this period I was County Engineer as well.

“At that time the engineer's office was located at the foot of Market Street on the waterfront. The members of the Board of Public works, by whom I was employed, were: Dr. John L'Engle, James A. Shoemaker, and George A. [DeCottes?], and they served without pay. The department of the city waterworks and other divisions of the city and county were governed by different boards. I do not now remember any of their names. Dr. Henry Robinson, I remember, was one of the mayors of Jacksonville in my term of service.

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“We were kept busy at that time in laying out the streets of expanding Jacksonville, also building the sidewalks and laying a new sewer system. At this period the bridge at Bridge Street (now called Broad Street) was built over the railroad tracks leading 5 into Brooklyn, where the present concrete structure is; we also paved a number of streets with vitrified brick, as well as certain portions of our county roads with Florida flintrock. Even in those early days when funds were limited, the city did extend its main sewers out to deep water in the St. Johns River.

“I sometimes think the gentlemen who served the city without pay deserve more credit than the present-day city officials who make a political football of their office, and do not always use the best judgement or consult and consider the people as to their best interests in the administration of the city's affairs.

“At that time Jacksonville had a population of around 40,000 to 50,000, a comparatively small place. Of course, it has grown very rapidly since the Florida East Coast Railway was extended to West Palm Beach /and Miami, and that section developed.

“This is a [Benaron?] map of Jacksonville - a plat map of 1885 - showing the extent of the city at that time,” he said, crossing the room and indicating a large map on the east wall.

“Here is one of the latest government maps, a new system of triangular-coordinator” he went on, pointing to a comparatively new map adjoining, with triangular markings all along the border.

“You will observe hundreds of lines connecting places together. There is practically no portion of the state of Florida that has not been triangulated. This map is first and foremost for the purpose of ascertaining the coast line on each side of the peninsula of Florida. You will see a number of rivers triangulated and the proposed Florida Ship Canal route; in fact, there is very little more work to be done to bring this map up to date. This system may be a little confusing, but its name - ‘plane-coordination’ - is not difficult to understand.

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“Early surveyors made their traverses in a north and south direction, and an east and west direction. But this proposed method will connect up the entire state, and the position of one settlement in [say?], the northwest quarter of the state can be very readily approximated by its distance, say, to Cocoa or Rockledge down on the east coast.

“The purposes of the map are many. When extensive developments are under way, especially should a speedway be built eventually, in order to save distances and avoid dangerous railroad crossings, and other good and sufficient reasons, this map will be of extreme importance.

“Further, in regard to this subject of plane-coordination, a bill will probably be introduced into the next Legislature permitting the description of property by plane-coordination as an alternative to that which is now in use of location by section, township and range, of land in the state of Florida.

“The very probable adoption of the plane-coordination system in the near future should warrant boys in the higher grades to study a little more vigorously the ordinary rules of trigonometry. Hardly any boy leaves school or college now whose training in mathematics is worth a hurrah.

“It is absurd, of course, to believe that any school in engineering can give sufficient instruction in mathematics to carry an [?]. K. through institutions of higher learning; the fine points must invariably come from experience - certain things [?] cannot learn in school, but must get from his employer, because in school it was not forced into his mind sufficiently.

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“After I left school in England, my first job was with the London-Northwestern Railroad. You know in England the government owns transportation lines and other public utilities,

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so the railroad system is well planned for efficient operation, and the training offered in my first assignment was thorough and practical.

“When I came to American, I secured work with an engineer of the State of Ohio. It seemed impossible to please him; everything I did was criticized for its bad points and poor execution, the good points, if there were any, were minimized, and he had no hesitancy in raving and cursing his office force for its stupidity, collectively and individually. I did not enjoy my service there. He kept me on duty until 11 or 12 o'clock at night, then called me at 6 in the morning for some special work. I did my best, but he was not satisfied; it was dash — blank! blankety - dash - blank! all the time. It seemed I was to blame for everything that went wrong. I had made up my mind, when this particular job was completed, I would leave, so one morning I told my employer I was leaving that day. He said: ‘You are not going.’ and I replied: “‘Yes, I am going down south.’” He said; ‘No, you're not. You are not going anywhere. I have just secured a government contract for dredging, widening, and improving the muskingum River, and you are going with me as my assistant at double your present salary.’

“So it turned out the severe training he subjected me to was only to test me; to ascertain if I could work under difficult situations, could competently execute work under strain and in the face of discouragement - in other words, what stamina I had, and my ability to carry on in the field of engineering.

“I believe in allowing the mind to develop naturally. For instance, take a group of children and giving them paint and drawing material, not as a matter of keeping them out of mischief, but to learn if there is any talent for the work. If only one of the group shows an aptitude for delineation or intelligence in his association of colors, then give him an opportunity to develop this talent by all means. Mass education is wrong.

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“Children should be allowed to make their own selection, and thus avoid the loss of time spent in several years' training in a school of college when they are not likely to continue in that particular line of work.

“When in high school I remember I used to have to spend several hours each night studying Latin; I had no inclination for languages, especially a dead language, yet I was required to learn it, and I have never had any practical use for it to this day. A physician or lawyer probably has more use for Latin, but for most students it is a loss of valuable time. I did have a natural talent for mathematics - trigonometry, calculus, [suelid?] - and took delight in proving a problem in the various methods.

“It is surprising to me the comparatively little tuition now given to mental arithmetic. Simple problems like - 6 times 11 minus 20 divided by 2 and multiplied by [?] [dealing?] with addition, subtraction and multiplication, should be worked out without recourse to pencil and paper, but it seems children are not given no training in mental arithmetic.

“Vocational training should be foremost in all educational systems. work with the child as an individual; find out what tendencies and abilities he may have, then allow the mind to develop naturally along these special lines. That is the making of geniuses.

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“It is not so much theory I would have the children taught; I would like them to teach themselves. Put the essentials in the room and let them go to work. If it is young engineers, give them the instruments and let them learn to use them. I have had assistants in training come to me and say the instruments were out of order. The instruments were perfect, but they just did not know how to handle them.

“At one time, when I was city engineer of Jacksonville, I had a number of young men in the office. It was during the rainy season, and the question with me was how to keep these youngsters employed until the rain stopped, so that we could go out and continue our

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field work. So, as an experiment, I gave each a map to be copied or traced. One of the lot did his work very creditably; the others spoiled the paper on which they were to trace. The result was that this one young man was kept in the office, and in a few months was copying the maps that came in to the county clerk's office for record, and in a manner infinitely better than the maps had before been copied; which prior to that, I might say, had been drawn by engineers employed to make such maps for the owners of property. This young man's name was Thompson.

“In another instance I can remember a young man who accepted employment at a very nominal salary. He became so useful that I was asked to part with his services to the Standard Oil Company, who were anxious to employ him. His salary under me had been so small that I told them I would part with his services only on the basis that his salary would be increased 50 percent. It was agreed, and he went to work at once for the Standard Oil Company, becoming so efficient that in time he was made auditor with a very large territory. This boy was Ray Bailey.

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“Another young man who has done some wonderful work came to me here as an ordinary rodman and chairman. During the world war I was on engineering duty near Bordeaux, and was surprised one day when a young man came to attention and saluted, to recognize him as one of the young men I had said goodbye to in Jacksonville. He told me he was then on board a submarine vessel - 24 hours on duty and 24 hours off duty, and spoke of his experiences in this submarine chaser jumping from wave top to wave top, and being thrown from one side of the vessel to the other constantly.

“This young man on his return to Florida was employed by the U. S. Engineer's office on the St. Johns River work. Then he obtained positions with several different states in road department work, until finally he was employed by the Port of New York Authority in providing suitable approaches to recent bridges that span the Hudson River, [in?] order that vehicular traffic could be properly provided for. This young man is now the father of a

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family, and has received many citations and honorary degrees for his splendid work in the engineering profession. He is often called upon by colleges to come there and lecture to certain students on engineering problems. This young man is Charles McIntosh Noble.

“When he returned to Jacksonville on a visit a few years ago, he was invited to address the local Engineers' Club, and also spoke before other organizations regarding his work, and it was reported very faithfully in the Florida Times-Union.

“I understand he is now engineer for the state of Pennsylvania and has taken over railroad work, including overpasses, and straightening out the old roadbeds which will finally be converted into a public thoroughfare.

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“I resigned my work in Jacksonville in 1898 to accept a position on the staff of Henry M. Flagler, who was then developing the Atlantic seaboard of Florida through the extension of his Florida East Coast Railway.

“I went to Miami Beach and laid out the city of Miami which was then a swamp, and the only thing indicating a town was a boarding house and three barrooms, and one little store.

“My training in Ohio with the crochety old engineer stood me in good service then, as the prospect was very discouraging. Mosquitoes, malaria, heat - and see this?” he said, pointing to a dressed skin of a large diamondback rattlesnake stretched out on the floor, apparently ten feet long. “There were plenty of those. Although, I must say, this particular one was not a very hard specimen to deal with, as he seemed sick, and we had little trouble in dispatching him.

“I continued with Flagler for a number of years, laying out other [towns?] on the east coast, then did some work for real estate promoters, coming back to Jacksonville where I have since been engaged on private contracts.

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“My long experience in Florida and dealing with a great many [neophytes?] in engineering has led me to examine their lack of education, or perhaps I should say, the shortcomings of the system under which they are trained.

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“The qualifications of a lot of boys in college are perhaps a mistake, and money and time are lost, whereas a more careful study of the young mind would develop geniuses, for which there is always a demand.

“The work, for example, of Major Bowes in the field of musical training and education. The man who does the employing can quickly see if the individual has any aptitude for the work for which he expects to collect pay. Of course, willingness is always commendable, but there is a waste of time in trying to develop any individual for vacancies that are not to his liking or his natural ability to master.

“Of course it would be a great mistake to glut the market with people developed along one line or one profession; the individual character and ability of a student should always be kept to the fore.

“I remember as a child in England, we were kept busy and taught a great deal at home. My father was a great help in this. We collected stamps throughout the country and from foreign lands, but my father had already started those collections and helped us on. The same way we collected coins, adding to those he already had, thus learned their value. When I was an army engineer in France during the World War, I had no trouble in figuring out the rates of exchange when bills came in, as I had been taught to figure in pounds, shilling, farthings, and pence, as well as francs and marks, in addition to dollars and cents; while in other departments there was great to-do in trying to make adjustments on proper payment of a French invoice for supplies. Sometimes the check would be returned and the whole matter referred to the U. S. Department at Washington, then back to France again,

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taking weeks, 12 before the proper amount in U. [S?]. exchange could be arrived at and the correct check sent.

“Then we children were put to work in the garden, each given a plot of ground and the same number of plants or seeds, and we would [vie]? with each other in trying to grow things, giving them the greatest care and attention, with my father standing by ready to correct or advise.

“The lack of parental interest and discipline, I believe, is one fault of our present-day education. My father always had time to spend with his children, but parents nowadays rush about too much, leaving a great deal of their work to servants, or allowing their children to run around without any supervision, expecting them somehow or other to turn into fine citizens; while discipline and education are left entirely to teachers.

“And this WPA is a mess. If they want departments efficient, why don't they put the right people at the head? System - efficiency - orderliness. Of course, if it is just a matter of some kind of work - any kind - to earn money to keep people from going hungry, that is a different matter.”

“Yes, but out of it all some people, in fact, a great many of them, are getting a particular training in this government work that will rehabilitate them and fit them for work along a particular line that they themselves never could afford or have had the opportunity for training.” I [vontured?] “and this is along your theory of individual development.”

“Well, I had never thought of that, or in that particular light. I suppose you are right.”

It was now nearly 5 p.m. and he cordially shook hands as he said goodbye.