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Electric Car descending College Hill attached to Counterweight Grip Car of the Bronsdon System.

(Junction College Hill and South Main Streets)

From a photograph taken about 1897

ISSUED QUARTERLY AT PROVIDENCE, RHODE ISLAND
The Validity of Antiquarianism

by Lawrence C. Wroth

Foremost among the motives which have brought us here tonight is the desire to honor the achievement of a succession of collectors and administrators who have made great the museums and libraries of Yale University. Somewhere in the consciousness of each of us is the exhortation, “Let us now praise famous men,” with which Jesus the Son of Sirach opened a passage of noble encomium. The men we are met to praise were not in every case famous in the common use of the word. As the son of Sirach poignantly reminds us, there are kinds and degrees of fame. From the mutation of ideas and the clash of systems certain men with eyes upon the future are able to create new combinations of thought and action which affect the destinies of nations. These are the heroes, “renowned for their power.” Tonight we salute them and pass on to consider men of another sort, those who, fixing their eyes upon the past, have attained “knowledge of learning meet for the people.” To such men not the present or the future but the past of the world, the world as it existed up to midnight of yesterday, is the normal area of activity. It is to the validity in the modern world of the antiquarian—
ism they profess that the proceedings of these two days in New Haven have been dedicated.

In the larger and truer sense, antiquarianism is the reconstruction of the record from its scattered and sometimes buried elements; it is the science of the past of the Earth and its occupants, of man and the things he has made with his hands, and of the clay tablets, manuscripts, and books in which he has embodied his thinking and doing. Coming at once to New Haven and this moment in time, it is the Museum of Anthropology, the Peabody Museum of Natural History, the Yale Art Gallery, and the Yale University Library.

There is no need to recall by name, or even by their categories, the elements of the many exhibits you have been looking at and reflecting upon these two days. But there is an aspect of those exhibits which should be emphasized because you may have taken it too much for granted, a characteristic of the whole which, because of its simplicity, you may not have thought about as you went through the Library and the Museums. It is this: here in these buildings are the things themselves, not simulacra of one sort or another, not models in paper-mâché, not photographs. In these exhibits are the authentic things in all their heft and bulk and realness. The men who made these collections sought and acquired books and pictures, silver and sculpture, mosaics, enamels, and natural history specimens in their original states, loving their size and integrity, perceiving a special virtue in their genuineness. Here is the evidence of man's continuous effort to glorify life by building nobly, by striving to unite in every field utility and beauty. To hold or touch these objects in the state in which they have been preserved is to establish reunion with their makers across the centuries. To study them in this state rather than in photographs or models gives the scholar that little acceleration of the heart beat, the quickening of the inhalation, which lift him from prosaic levels to inspiration.

In these museums and in the great library we have visited are the original objects in masses — books, paintings, geological specimens, and what not — crowding one another and, happily, all but crowding their curators out of doors. Under these conditions arrive the golden days of an institution. This is when the collecting passion is at its peak, these days when there is no room to house the things which must be acquired, when objects are on the way which, possibly, may not be unpacked for months or even years. Such conditions compel curators and committees to a policy of judicious selectivity, to the weighing of space against the importance of available purchases, too frequent changing or freshening of exhibits, and, furthermore, they compel them to drive ceaselessly for new buildings, new stacks, renovations, and additions. In an institution so situated is dynamism and life. Overcrowded conditions should be in a continuous state of correction, but they should never be a cause for regret.

The men who make and serve museums and libraries are in one respect, certainly, truly happy men. The attributes and obligations of apostleship are not among their qualifications. They preach no gospel of regeneration, offer no formula for salvation. More fortunate than the historians and the philosophers, they need make no moral judgments; more fortunate than the economists, they need condemn neither Marx nor Management. The museum director is interested in the shape and size of the jaw of the pterodactyl because it is part of the record to determine what that creature ate for his nourishment. He may even concern himself with the pterodactyl's table manners, but never, certainly, to condemn them. The curator of a collection of pictures and of objects of the craftsman's skill amasses everything that comes his way, selecting the good when he can, but, if the good is not available, holding on to the bad if only it is representative. The librarian procures and makes available the Memoirs of Casanova with the same impartiality as the Super quarto libro senten-
tianum of Thomas Aquinas. He pursues a copy of Bacon's *Novum organum* disregarding the circumstance that its author accepted bribes to the confusion of justice. These men, the makers and administrators of museums and libraries, are free men, above the necessity for judgment between good and evil. It is theirs merely to assemble and arrange the evidence. They are happy in believing that the greater the body of evidence in hand and the clearer the record it establishes of the past, the more merciful, the juster, will be the judgments and the more intelligent the programmes for the future.

The creation through some two centuries of the institutions whose services to men we are celebrating, their gradual and quiet progress towards distinction, must be looked upon with pride not alone by the University which owns them but by the larger intellectual community of which the University is a part. It would be superfluous at this time to rehearse the steps through which they have approached an always unattainable perfection. That has been done for this occasion in a concise history the more valuable in that its author has disdained in his writing neither eloquence, enthusiasm, nor humor. From a reading of Mr. Wilmarth Lewis's book, *The Yale Collections*, one derives the dominant idea that these institutions were created because certain men, a succession of men, were moved by something which transcends the lukewarm ardors of the casual collector. Firing them, on the contrary, was a passion, the passion to know the past, to understand it, and to bring order out of its confusion. It was their destiny to be sick of a fever which could be assuaged only by learning how things had been done in the old days before them, now, and when, and where, and why. Theirs was the possession, call it peering and prying or call it noble curiosity, as you will, which distinguishes the great collectors, the men of passion to whom the word "hobby", and the meaning it holds when applied to their pursuits, is an offense, a fighting word if they had time to pause and

fight. These were men who labored in the muck of prehistoric lake beds, who dug away the mounds beneath which buried cities lie, or who tirelessly went through the process of selection and rejection in the cluttered accumulations of the written word. From whatever motive they began these researches into the past, they stayed to carry them on in order that they or their successors with the record before them might know and understand. However they explained their activities to themselves and others, in whatever degree of foresight they carried on their work, there was in them, dimly or brightly perceived as the case might be, some force of conviction that to know and understand was the first step towards today's tolerance and tomorrow's love and charity.

This reference to today and tomorrow leads to a further definition of the function of the antiquarian. Your true antiquarian, it has already been suggested, has no direct concern with the future. His work has been done when he has brought together the elements of the record, when he has created the basis upon which understanding may be founded. He does not "prophecy nor fret at all." None the less he comes close to prophecy by merely living his belief that all progress is founded upon the carrying on of tradition. Study the tradition through my record, he seems to say, select from it intelligently, add to it with decent reverence, and out of that procedure will evolve beneath your hands something different and, it well may be, something finer. In his practice of it antiquarianism becomes the basic process in the evolution of ideas.

There is utility of the highest sort in institutions which accept the validity of antiquarianism and boldly build their activities upon that conviction. More particularly there is utility in them when they are associated with colleges and universities. And in this day when the achievements of science and technology have placed before us a new set of philosophical problems, there is in them, whether within or without the academic precincts, a greater utility than ever. In the world before us science cannot stand alone,
nor can it alone solve those problems. Like all other departments of thought and activity it is the servant of the people, working to make effective the ideas which prevail in its time. The events of the past few years have taught us how overwhelmingly important it is that ideas be right ideas, conceived in humility and founded upon compassion for man in his unceasing struggle with destiny.

The prerequisite of right ideas is knowledge of the world we live in and understanding of the heart and mind of man. These museums and libraries, painfully created through the years, record the history of aspiring man and his doing and thinking. There are many of us who believe that in them is the hope of the future. It is right that through this celebration we who are of that number should honor the achievement of the collectors and administrators who created and organized the Yale institutions.

The Quonset Hut
by Henry G. Jackson

Prior to the start of the National Defense Program in 1941, Quonset was known only as a quiet summer cottage settlement, on the west shore of Narragansett Bay, in North Kingstown, Rhode Island. Some four miles to the westward, on the main line of the New York, New Haven & Hartford Railroad, is Davisville, where formerly a small woolen mill was located. Both of these now form a part of the great Quonset Naval Base, and so great has been the change in their appearance, that no trace of resemblance to their former selves remains.

The odd looking, curved roof structure known as the Quonset hut, takes its name from its birthplace in the Davisville section of the Advance Base Depot. The first hut was constructed in the spring of 1941. Its design was originally developed by Captain F. S. Huntington, (CEC) USNR, then a Lieutenant Commander; Commander A. W. Van Leer, (CEC), USNR, then a Lieutenant; and Lieutenant W. T. Wishart, (CEC) USNR. These officers worked in cooperation with C. C. McCulley, L. F. Giblin and E. A. Seaman, civilians, in the employ of the George A. Fuller Co., and Merritt-Chapman and Scott Corporation, contractors for the Bureau of Yards and Docks, U. S. Navy Department. In the summer of 1942, several changes and modifications were made by Commodore C. P. Conrad, (CEC), USNR; Lieutenant G. M. Wigglesworth, (CEC), USNR; Lieutenant Fred Klee, (CEC), USNR; and A. R. Barbuto, civilian employe of the contractors.

While the basic design of the Quonset hut has remained the same, important structural changes have been made therein. Meanwhile, its name has become a part of the English language, in the form of quonset, and is a household word in the distant lands to which it has been carried, across the Atlantic Ocean from Newfoundland and Iceland, to the North of Ireland, as well as on the far-flung islands of the Pacific.

The Quonset hut met the requirement for a portable, demountable unit which could be used as a barracks in overseas bases. In general contour it follows the lines of a predecessor, the British Nissen hut, although with important differences involving much time and research.

The earliest form of Quonset hut was a semi-circular, corrugated metal roofed structure, 16 by 36 feet, which could be packed and shipped with space-saving economy and erected rapidly by unskilled labor. The increasing demand for barracks that arose upon the entry of the United States into World War II was reflected in production of the huts, for only two weeks later the daily output had risen to 150, entirely completed.

The demand for much larger structures called for a distinct change from the original design, in which the curved line forming the sides and roof began at the floor, thereby cutting the interior width down to only 16 feet at the floor line.

A more suitable architectural rib was developed in the form of a welded sheet metal I-beam, replacing the former T and the arched rib floor springers, which now provided a
vertical side wall four feet in height from the floor line, thus adding greatly to the spaciousness of the interior. These were manufactured by the Stran Steel Division of the Great Lakes Steel Corporation, whose name they bear, while continuing to be popularly known as "quonsets".

These huts may be sheathed inside and outside by nailing directly into the grooves, and their plywood floors laid in the same manner, thus combining the flexibility of the frame house with the advantages of simplicity and durability of the pre-fabricated one. Their insulation insures comfort during all extremes of weather.

The huts intended for tropical use have screened bulkheads and overhanging roof for further protection against the sun; a water trough is also provided.

The structures intended for colder climates, have closed ends, flush with the roof, and the water trough is dispensed with. In both types, protection from bomb blast and splinters is effected by banking earth to a height of some three and a half feet above the floor level along the sides of the hut.

Many problems had to be solved, and details worked out, in developing the 48 different types of structure required by the Bureau of Yards and Docks. On account of the substitution of the I for the T beam previously referred to, redetailing was necessary. As the necessity of adapting these established designs to various uses arose from time to time, field units were erected, tested, and studied to demonstrate their value in actual field service.

It was obviously important to have design and detail requirements that could be met by manufacturers and by those doing the erecting, and to that end close contact was kept with the manufacturing. In all, 86 approved plans for hut and building design were thus prepared by the Architectural Department. As with all development problems, much time was required in translating the outlined sketches received from the Bureau of Yards and Docks into practical and definite plans and details, prior to the Estimating Department's doing the required careful cost figuring prior to purchasing.

From the original 16 x 36 foot structure, Quonset huts developed into 40 x 100 warehouses, utility buildings, hos-
pitals, mess halls, decontamination huts, nose plane hangers, barracks and others.

The rapidity with which these huts may be erected is described in the November 10, 1945, issue of the United States Investor, wherein it is stated that “a hut 20 x 56 feet, complete with electric lighting, has been erected by 12 men in one day. A 40 x 100-foot hut with concrete floor has been completed by 24 men in four days.”

The post-war civilian uses for the Quonset hut cover a wide field, including summer cottages, beach houses, garages, cow barns, stables, warehouses and shop buildings. The type of framing developed has proved highly adaptable in multiple dwelling and apartment house projects. The Quonset construction includes the Ford Foundation’s development at Dearborn and other places, also the Standard and the Gulf Oil companies’ housing for employees in Latin American countries. The Federal Housing Authority is arranging for erection of the huts as dwellings for returned veterans, including those who are going to college, as well as other students who would otherwise be unable to find dormitory or outside boarding places due to the present overcrowded conditions existing in this country.

The cost is remarkably moderate. As of November, 1945, a 20 x 48-foot structure retail for approximately $900, and a 40 x 100-foot, general purpose building for $3000. Rapid production does not offer any problems, as during the war these buildings were produced in tens of thousands.

Those who have lived in them, speak well of the cosiness of the Quonset hut and the ease with which it may be kept clean. With an enviable reputation established and tested to meet war conditions as well as the requirements of ordinary daily life, the permanence and success of the “quonset” seems assured.*

* For helpful information used in the preparation of this article, thanks are due to Rear Admiral J. F. Jelley, CEC, USN, Assistant Chief of Bureau of Yards and Docks, Navy Dept., Washington, D.C.; Captain F. S. Steinwachs, Commanding Officer, U. S. Naval Construction Training Center, Davisville, R. I.; and Commander E. R. Bennett, CEC, USNR, Executive Officer, Naval Advance Base Depot, Davisville; and to Mr. Stewart G. Wallace, Design Manager, Advance Base Depot, for his cooperation, constructive criticism, and valued information.

The Providence Cable Tramway
by Albert W. Claflin


(Correction: On page 53 of Rhode Island History issue of April 1946 the last line of Part I of this article should read: “(the passenger car) ... “continued forward on the north track to the horses.”)

The writer was born in 1885 and lived at 190 Waterman Street until 1918. This house is located between Governor and Gano Streets and the original Governor Street horse car line turned from Governor Street east on Waterman Street and ran by his house, turning north again on Gano Street on its way to Blackstone Park. In 1889 construction was started on the Cable Tramway and the Governor Street line was relocated, turning east at Pitman Street instead of at Waterman Street and continuing to Wayland Avenue, where it turned north to Wayland Square and rejoined its former route by turning east on Angell Street. The balance of the route was east on Angell Street to Butler Avenue, then north on Butler Avenue to Irving Avenue. (Blackstone Park). Later, when electrification made possible the extension to Swan Point, the terminus of the Governor Street line was made at Wayland Avenue and Waterman Street while Swan Point was served by the College Hill—Butler Avenue line.

From the house at 190 Waterman Street, therefore, the writer has seen first, the horse cars, next the cable cars, then the electric cars run on the abandoned cable car tracks, and finally the replacement of these tracks with the heavy grooved rail and the handling of large electric cars made possible after August 1914 by the East Side tunnel. Transportation direction has changed several times although no more than one track has ever been placed on Waterman Street. Horse cars ran both ways alternately, on the same track, cable cars travelled west, early electric cars travelled...
west, while today all traffic goes east, and Waterman Street has become a "one-way" street east for trolley cars and autos alike.

The Providence Evening Telegram of Dec. 9, 1889 carries the news item that the cable was being pulled through that afternoon by a team of ten horses using two 9-inch machinery pulleys placed 30 feet apart and reset as often as the cable had advanced that distance. The same paper on Dec. 12, 1889 tells us that the first trip had been made the previous afternoon by the grip car alone, the passengers being President Walter Richmond of the Providence Cable Tramway Company with his two daughters Caroline and Phoebe and a friend, Miss Campbell; William Talbot, treasurer of the company and an Evening Telegram reporter. The "gripman" was Milton H. Bronsdon, superintendent and engineer, and an unrecorded passenger, who, however, remembers well that first trip of Dec. 11, 1889, was a boy, Alonzo R. Williams, who today is vice president and general manager of the United Electric Railways Company. The Evening Telegram states that "the trip was made from Red Bridge to the foot of College Hill without stop or accident" although a later Providence Journal report states that Mr. Bronsdon stopped the car half-way down College Hill (between Benefit and South Main Streets) "to demonstrate its possibilities and its safety to the crowds which filled Market Square, and all vantage points in the nearby buildings."

Arriving at the foot of the hill the grip car was lifted on to the north bound track, as the cross over was not completed and it returned without incident up the hill, north on Prospect Street to Angell Street, and then east on Angell and South Angell Streets to the car barn.

The Evening Telegram of Dec. 26, 1889 reports the first trip with passengers as guests on Christmas Day, 1889, as follows: "GLIDING OVER THE HILL The City Government tests the comforts of the Cable Road. It was a jolly company who took their seats in the
three cable cars which stood upon Market Square besides the Board of Trade Building at 11 o'clock yesterday. Just five minutes later than the appointed hour the cars started, gliding over the hill as though it had not ever been an unsurmountable obstacle to East Side progression. Superintendent Milton H. Bronson stood at the grip in the motor car with gripman G. G. Chipman by his side. President Walter Richmond and Mr. Alfred Stone welcomed the guests which comprised the members of the Common Council, the Board of Aldermen, other prominent city officials and the stockholders of the road.

"The trip up College Hill was made in a wonderfully short space of time as was the run to Red Bridge. At the terminal station the examination of the machinery was made, its uses explained, and a wonderful lunch was served. At 12:15 o'clock the company started upon the return trip to the Great Bridge which was made in just fifteen minutes."

After the return of the guest party to Market Square the cars were thrown open to the public without charge and half-hourly trips were run from 8 A.M. to 10 P.M. daily until the end of the year.

On Jan. 1, 1890 regular service was inaugurated and fares were collected thereafter. Recently Mr. E. Tudor Gross, in reviewing his first diary, found under Jan. 1, 1890 the notation that "cable cars commenced regular service today". The last cable car was run at midnight Jan. 26, 1895 and electric power (trolley cars) plus a College Hill counterweight system was used thereafter. Horse-cars were discontinued in April, 1894, and the little white passenger cars which the horses had brought to the Cable Road grip car at the foot of College Hill were thereafter fitted with a motor and trolley and arrived there under their own power. There the trolleys were tied down and until Jan. 26, 1895 the grip cars towed them around as before. The Providence Journal of Jan. 28, 1895 reports that it had been intended to change over to electric power that day using a counterweight system on the hill that had been in the process of installation for some time, but mechanical troubles developed in the counterweight system and it did not commence operations until Feb. 15, 1895 at 6 P.M. In the meantime the original cable car route was covered by electric cars as far as the top of the hill and to quote the Providence Journal again, "there the passengers changed cars and took constitutional up and down College Hill".

The original cable cars carried a two-man crew: the grip man who stood in the center of the grip car and was responsible for starting and stopping the cars, and the conductor who stood at the back of the passenger car, usually on the open platform, collected fares, and signalled by a cord running through the car to the front platform bell when to start and stop. He also had to come forward to the grip car on signal from the grip man to collect fares from passengers who might get on and be seated there. In addition he manned the handbrake on the front platform of the passenger car during the trip down College Hill and up to the point where the horses were attached. Early operators of the grip cars, according to Alonzo R. Williams in Rhode Island History for April, 1945, were Patrick Fitzmaurice, Oscar Taylor, Eli Levery, and John Cox. As a boy the writer of this article knew them all, but in particular he knew Patrick Fitzmaurice who visited his house frequently and finally married Jennie, a woman who had been a helper to the writer's mother while the children were small. "Pat" was a thick-set genial man whom we all liked very much and there were many men in Providence who heard of his death a couple of years ago with a feeling of the real loss of a boyhood friend.

Mention should be made of the opening of a modest picnic and amusement park not far from the Power House, and located about 500 feet north of the junction of South Angell and East River Streets. This was intended to influence people in other parts of the city to visit it and thereby become passengers on the cable cars. A building known as "Cable Cottage" was erected on the property,
where soda and bottled soft drinks were sold, and this building is still standing on the heights overlooking the Seekonk River and the Narragansett Boat House.

There are many humorous incidents that might be noted in connection with the operation of the cable cars, for the boys soon found out that a string or light rope hung down through the slot would quickly wrap itself around the sticky, tared cable and be jerked from their hands. From this it was but a step to tying something to the outside end and soon weird processions of articles were travelling along the slot, many of them to be snapped off by the wayside but also many arriving at Market Square.

We are indebted to Richard C. Shaw of this city for a detailed story of the small express-wagon trips the boys were soon making. A wire was fastened into a loop on one end and a hook on the other, and the hook slipped through the slot to engage the cable. By holding the loop and steering with the handle of the cart, two boys sitting in the cart could get a good ride. Another method was to slip the loop over the handle, but this was dangerous, because if a policeman were seen, it was difficult to unfasten it and get away from the scene with the cart with the promptness that the occasion demanded. Many blocks of wood, horse chestnuts, pine cones, pasteboard boxes, tin cans (they made a wonderful noise, two or three together, bouncing along), dead animals, etc., etc., travelled up the streets at all hours of the day and night, and it was once recorded that a battered silk hat majestically and dignifiedly came down College Hill one noon to roll dejectedly into Market Square when it was snapped off at the bottom.

On Fourth of July the younger generation of the entire neighborhood arose early and when the first grip car and trailer came along, the track on Waterman Street was lined with caps, torpedoes, and cartridges from Gano to Governor Streets. “Pat” was on that first trip, and he took it all as a huge joke, his genial face wreathed in smiles and chuckles as the cars went up the street to the sound of the “machine guns”. Other boys up and down the route lined other portions of the track, as all could hear, and Mr. Shaw writes that his “gang” took care of Angell Street near his home for blocks. His “gang” ranged in age from eight to twelve years and included two of his brothers.

“It was also great fun to hook rides on the grip cars in slack hours,” Mr. Shaw writes. “The seats were low and the speed moderate, so any live boy could hop off and on with ease, and the ‘gripman,’ as we called him, was powerless to do much about it from his position in the center of the car unless he stopped and gave chase, which he often did when there were no passengers aboard.” Mr. Shaw not only remembers “Pat”, but he also particularly remembers “Johnny Fat”, who “was a short, stocky, light complexioned fellow, smooth shaven, but with one or two days’ growth had a very rough beard, much like a wire brush, and if he caught us in the chase, he would delight in rubbing his cheek against ours, which felt much like coarse sand paper. Another trick of his was to grab our little caps, roll them up in a ball, put an elastic band around them and throw them as far as he could, generally over a high board fence. And how he would laugh! By the time we recovered our hats, he was well on his way.”

Stephen Miller, now of the Providence Washington Insurance Company, was a small boy at the time, and one day was near at hand when the cable broke, snapping with a loud noise and, of course, stopping all cars. He was scared, but he rushed into the street, looked through the slot at the cable and then ran home to tell the news. I was in the yard with his younger brother, Richard, at 195 Waterman Street, when he burst in yelling at the top of his lungs: “The cable’s busted and it’s lying on the ‘drown’d’.”

College Hill was much narrower from Benefit Street to South Main Street in those days than it is today, in fact, except for the “fanning out” near the Athenaeum, the entire roadbed was about the width of the section near the college entrance today. Mrs. Sydney R. Burleigh,
who has lived at 69 College Street the greater part of her life, recalls one attempt to create an "easy approach" to the East Side by cutting a trench in the center of the street, to extend to and beyond Brown Street, and leaving room on each side for a one track road for horse drawn vehicles. This costly and visionary project actually reached the stage of having abutting property owners sign an agreement to allow it, and she was one of them, but fortunately it never advanced any further before the cable car project was launched. When the double tracks were placed on Prospect Street from Waterman to College Hill, it became necessary, because of the narrow streets, to place one rail practically in the gutter close to the curb stone. The double track on College Hill was similarly placed near the south curb and left a single scant width road for vehicles between the north track and the north curb and this roadway was paved to Benefit Street with round cobble stones. Mr. Edwin Collins Frost, writing from California, recalls that after this work was completed a resident of College Street complained that now "no one could be married or buried from College Street."

From the bend of the hill above the Athenaeum the grade was made markedly steeper than it is today and at Benefit Street a sufficient space was levelled out so that grip car and passenger car could come to a stop with both cars on a horizontal level. Below Benefit Street both tracks were as close as possible to the south curb again and were paved with round cobble stones.

Thus College Hill became almost impassable for horse drawn vehicles and actually impassable for bicycles which of course could only be ridden down hill because of the grade and which bounced so on the round paving stones as to make it impossible to control them. But boys, as usual, solved many difficulties and many learned to brake the speed of their bicycles with a foot on the front wheel and guided their wheels down hill on the flat steel pieces forming the sides of the "slot", which was too small to catch the tires. As the writer was peacefully "riding the slot", in this way one day he heard a piercing shriek from the sidewalk and a shrill feminine voice called "Oh, see that awful boy!" Although this occurred over fifty years ago he remembers it well as it startled him so that he allowed the bicycle wheel to roll off the slot onto the cobble stones and with difficulty regained control.
Mr. Frost recalls in his letter that a malaria epidemic occurred during the construction of the line which was blamed on to the germs lurking in the ground and upheaved during the construction work. It was later learned that the construction laborers brought the disease with them.

The Providence Cable Tramway Company was a financial success from the start with a five-cent fare charged for each passenger. It had been characterized by the representatives from the Union Railroad Company at the hearings opposing the charter as "doomed to be a dismal failure" but newspaper reports state that it earned 12½ per cent or more on its investment, and soon was planning to ask for rights on other streets to the East and North. The Union Railroad Company was quick to recognize this threat to its successful future and records show that it quietly bought up all the shares of the Providence Cable Tramway that it could, finally obtaining the controlling interest with the purchase of a block of shares on Oct. 23, 1890. Later they made a public offer for the remaining stock at $130 per share (later $150 a share, Providence Journal, Sept. 7, 1914) and secured all but two shares whose owners refused to sell at any price. The failure to secure these two shares made it impossible to dissolve the company and operate it directly, so on Nov. 28, 1894 the Providence Cable Tramway Company leased its entire property and rolling stock to the Union Railroad Company for a term of fifty years from Jan. 1, 1895 for a rental of $6 per share annual dividend guaranteed, plus all expenses that the company might incur.

According to the Providence Journal of Dec. 20, 1906 the United Traction & Electric Company of New York City, which had been organized with a capital of $8,000,000 by Nelson W. Aldrich, Marsden J. Perry, and William G. Roelker of Providence, together with Anthony N. Brady of New York City, bought all of the Union Railroad Company stock in February, 1893, for $250 per share, so that at the time of the lease this company controlled the entire traction system of Providence. It is interesting to note that although the Providence Cable Tramway Company operated cable cars in this city for only slightly over five years, due to the two shares above referred to, the corporate life of the company approximated fifty years. The original charter to the Providence Cable Tramway, Inc. was issued April 25, 1884 and as late as Dec. 27, 1909 a Providence Journal article reported two shares as being still held by their original owners. A formal petition to dissolve the company is published in the Providence Journal of Feb. 7, 1934.

As previously stated, the last cable car was run on the evening of Jan. 26, 1895 and thereafter it was intended to have the little white cars, which had been fitted with one motor and a trolley, use their own power to cover the former cable route. Trolley wires had been strung on Angell and Waterman Streets, the rails of the cable company had been connected by heavy copper wire bonds, and all was in readiness except adding a second motor to the small passenger cars so that with the aid of a counter-weight system on College Hill they would be sufficiently powered to travel up and down the hill. This second motor had been purposely left out before as it would have made the cars too heavy for the cable that gave the power to the original grip cars, which pulled them around the route after the horses were withdrawn. Due to mechanical troubles developing in the counterweight system the first electric cars did not travel up and down the hill until Feb. 15, 1895 at 6 P.M., when for a short time a free shuttle system was operated transferring passengers from cars arriving at the foot of the hill to cars waiting at the top and vice versa, until the "double motor" cars were available. As soon as the "double motor" cars were ready they made the through trip and the Providence Evening Telegram of Feb. 26, 1895 reports as follows: "System is a success . . . Union Railroad's Counter Balance Working . . . Power House to be torn down at once." It also records that "People of the East Side have become reconciled to the presence of electric cars and are said to be pleased rather than otherwise" thus indicative that the storm of
protest that arose when the placing of motors under the car bodies raised them up materially, thus making the outside step much higher, had largely subsided. It might be noted here that the Cable Road was the last to be electrified and that with its completion all street car transportation in the city was by electric power.

The first counterweight system on College Hill was designed by J. P. F. Kuhlmann, a civil and mechanical engineer of Seattle, Washington. His system had been in successful operation on the Ranier Avenue line in Seattle and also the Front Street line in Portland, Oregon, where it was installed Aug. 28, 1891. It was so designed that a car going up or down the hill attached itself to a cable which was in turn connected with a counter-weight travelling in a conduit beneath the track. This counterweight was intended to substantially balance the weight of an empty electric car so that the only power (or brakes) required would be to overcome the weight of the passengers. The conduit beneath the car travel was divided into two parts; the deeper, which was 42” wide and 14” deep (.36” x 18” in Portland, Oregon) containing two 6½ ton weights mounted on wheels which travelled on an underground track, and an upper section, 6” wide and 8” deep which carried the cable to which the “latch” (or clutch) was attached through the slot. From the point where the latch was attached a 3/4” cable went to the top and bottom of the hill, passed around pulleys into the deeper part of the conduit and was attached on each end of the counterweight. At the bottom of the hill an underground bumper stopped further progress of the counterweights, while at the top the deeper part of the conduit was dug out so that the counterweight had a horizontal space inclined slightly down in towards the hill. This made necessary a definite pull to start it over the “ridge” and down hill. The “latch” remained above the slot and thus above the street level at all times at the top; at the bottom there was a rectangular pocket into which it dropped and was held.

The passenger cars were all fitted with a spring device to grip the latch which then could only be released by pulling a cord at the side of the front (or back) platform, and the method of operation was as follows: At the top of the hill the passenger car came slowly down until it engaged the “latch.” An employee stood there to supervise, and then stepped down to the car which proceeded down hill under its own power, at the same time pulling the underground counterweight up to the top. At the bottom the employee who had ridden down on the car got off, pulled the cord and the “latch” dropped into the pocket. Cars bound up the hill ran over and beyond the “latch” as it lay in the pocket and stopped. The “latch” was then raised by a special device and the passenger car then backed up till it engaged the “latch” which it did with a spring grip. As the car went up the hill it was helped by the counterweight coming down underneath. At the top the employee who pulled the cord at the bottom and who had ridden up on the rear platform, pulled the cord releasing the “latch” and the car proceeded by itself leaving the “latch” ready for the next car down.

The big disadvantage of the system was the fact that only one car could go up for each car that came down and vice versa which caused congestion and trouble, particularly during rush hours and if traffic was blocked by emergencies such as a fire. In fact traffic grew so rapidly that the system proved totally inadequate to handle it and it was replaced the following year by the Bronsdon counterweight system which served remarkably well until it in turn was replaced by the East Side Tunnel on Aug. 9, 1914.

Less than a month after the Kuhlmann counterweight system began operations, about noon on March 8, 1895, a terrific explosion occurred from leaking gas that had collected in the conduit at its upper end opposite 58 College Street, then occupied by Charles E. Godfrey, later by Dr. Seabury as “Finsal House,” and until recently the Alpha Delta Phi House. Planking, manhole covers, and cobblestones were blown in all directions, shattering windows in all nearby houses and even breaking one in the
First Congregational Church at Benefit and Benevolent Streets. Thomas F. Nelson, an employee of the company who was standing there to supervise the engaging of the "latch" by the cars, was struck by a stone or plank and died the next day. Fortunately no car was near at the time and although passersby had many narrow escapes on one else was reported injured. The writer as a boy knew Mr. Nelson very pleasantly as he passed him twice daily going to and coming from school and the shock of his untimely death still stands out in his memory.

The Providence Journal of March 9, 1895 states that the ground, etc., was torn up for fifty feet but that the damage was immediately repaired by a large crew of workmen and that cars were running as usual by 5 P.M.

The second and last counterweight system was devised by Milton H. Bronsdon of the traction company to overcome the inadequacies of the Kuhlmann system and for a time gave greatly improved service to the East Side. In many respects it was like the previous system and the chief points of difference follow: First, it used both tracks so that two separate units operated side by side; second, it had rebuilt electrified grip cars attached to the "latch" at all times capable of handling two passenger cars at once; third, the counterweights, by a system of pulleys, travelled only one-half the distance (to Benefit Street) while the surface cars went the whole way; and finally, if traffic one way was unusually heavy, the grip cars were powerfully motored so that they could travel up or down the hill by themselves to the point of congestion. Also they could move one or two passenger cars up or down the hill as the occasion demanded, and as traffic increased it was usually two. As the grip car was the only car attached to the counterweight by the "latch" it was always on the down side and provision was made for it to drop the "latch" into a special rectangular pocket in the street and get out of the way of passenger cars coming to and going from the foot of the hill. Grip cars were rebuilt with entirely glassed-in bodies so that the operators were protected from weather and also there was no place for any one to get on for a ride except at the door and each end. Among the well known operators of these grip cars was our old friend, Patrick Fitzmaurice.

Only a few runaway cars ever travelled the hill and the writer knows of only three such accidents, in which no one in the cars was injured. One car is reported to have run away late at night when traffic was negligible and to have held the track successfully down the hill, across Market Square and up to Turks Head where it was finally brought to a stop. A second one getting out of control after leaving Benefit Street smashed into a South Main Street car which was crossing the foot of College Hill and knocked it into the side of W. B. Chase's store. One passenger on the South Main Street car was slightly injured. After the installation of the Bronsdon counterweight system an empty car late one night rounded the curve at the top of the hill and slipping on wet leaves on the track (it was late autumn) went the whole length of the hill and smashed into the back of a two car "convey" the grip car had just taken down. When he saw the crash was inevitable the motorman shut off his reverse power, set his hand brake, and went inside and sat down. He escaped uninjured and the only damage was to the vestibules of the cars, where they came together. The writer was on a car that ran away under similar circumstances as it approached a grip car waiting for it at the top of the hill. "Pat" Fitzmaurice saw it coming, started his grip car down hill and soon was speeding down just a little slower than it was travelling. As a result the passenger car and grip car came together with scarcely a jar just above Benefit Street, the grip "pin" boy dropped the coupling pin in and we made a perfect stop at the bottom of the hill.

All cars taken up or down by the grip cars were coupled together and to the grip car.

Runaways of the counterweights occurred from time to time and were usually caused by a broken cable. The result was a general smash-up of the "works" at the bottom of the hill and the inconvenience to the public, who had to walk for one or two days while repairs were being
made. Runaways of the counterweights caused by the "latch" slipping out of its rectangular pocket because improperly put in occurred rarely, but Alonzo Williams in Rhode Island History for April 1945 recounts two instances in one of which the latch flew up the hill in time to take the hind wheels off a junk wagon that was just crossing the tracks at Benefit Street.

Insofar as the writer knows, no passenger has ever been injured on the hill traffic. In an article in the Providence Journal for Aug. 8, 1914, Amasa M. Eaton describes the old cable tramway as the "last of its kind in the country" and further states that "records do not show that a single passenger was ever injured on the hill."

The final chapter in traffic service to the East Side, up to the present time, was written when it was found that the cars could not be increased in size because of the curves at the top of the hill, and the second counterweight system was unable to handle any further increase in traffic. Thus, on Nov. 12, 1912, work was begun on an East Side tunnel for double-track trolley service with longer and better cars. This tunnel was completed in early 1914 at a cost estimated to be $700,000 and ballast was placed and tracks laid April 6, 1914. On August 9 at 1:30 A.M., a Butler Avenue car, the last trolley car ever to go up College Hill, was pushed over the brow and returned by way of Brook Street, as work of dismantling the College Hill installation had begun. The tracks were quickly removed and the street once more became passable for street vehicles.

The first early morning cars on August 9, 1914 were routed through the tunnel which Engineering News records as 2100 feet long, 25 feet wide, and 17½ feet high, giving a two foot clearance between each car and the side wall. The grade was reported as 4.8%. In the same reference we note that the New Haven Railroad tunnel is 2½ feet narrower although being 12½ feet higher.

That there may yet be another chapter in East Side transportation is indicated by the waterproofing work now going on in the East Side tunnel. When completed it will make possible the removal of the trolley tracks and the paving of the roadbed, which in turn would permit the use of the tunnel for "trackless trolleys" and other vehicles. Its size compares favorably with the East Boston vehicular tunnel.

In closing may I express my great appreciation of the interest and assistance I have received from many sources. Space prevents my mentioning more than a few names, and allows the listing of only part of the references from which real facts were obtained, but to all who have helped in any way I extend my sincere and profound gratitude.

ACKNOWLEDGMENTS AND REFERENCES

Assistance was received from the Rhode Island Historical Society, Providence Public Library, Providence Athenaeum, Providence Journal Library, Alonzo R. Williams, E. Tudor Gross, Richard Shaw, Stephen Miller, Frederick Cooper, Edwin Collins Frost, and Mrs. Sydney Barleigh.


Since the first part of the article was published in Rhode Island History, April 1946, the following facts have been brought to the attention of the writer:

1. The clock, shown on page 52 in the railroad office and waiting room building at the left of the picture (See also extreme right of picture on page 44 and description on page 43) was removed to the "Board of
Zachariah Allen Commemorated

The pioneer silviculture experiments of Zachariah Allen were commemorated on Sunday, October 20, 1946, at ceremonies held in Lincoln Woods Reservation under the auspices of the Rhode Island Historical Society. A spring on Allen's original silviculture plot was dedicated to his memory, and a marker was unveiled on the site by Zachariah Allen, a great grand-nephew.

The program included addresses by Henry D. Sharpe, the Society's president; William Greene Roelker, its director; Governor John O. Pastore; Prof. Herman Haupt Chapman of the Yale School of Forestry; and Charles Gillet, forester for American Forest Products Industries, Inc. A pageant, "The Forest Trail," was presented by Boy Scouts of the Blackstone Valley area; it was written by Mrs. Anne Crawford (Allen) Holst, a grand-niece of Zachariah Allen.

The program was made possible through the generosity of William Ely, a grandson of Zachariah Allen and a member of the Society for seventy years. Mr. Ely is the senior member of the Society.

As part of the printed program of the affair, "Zachariah Allen, Pioneer in Applied Silviculture," an article by Monterey Lemar Holst, was reprinted from the Journal of Forestry for July, 1946.

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Book Review

EARLY REHOBOTH

Documented Historical Studies of Families and Events in this Plymouth Colony Township

By Richard LeBaron Bowen

Volume II. Privately printed, Rehoboth, Massachusetts. 1946. pp. 177. 13 Illustrations. $5.

Local antiquarians who bemoan the fact that they have not been forestalled in the writing of the histories of their towns should consider the works of Mr. Bowen and go and do likewise. The town which has a good narrative history of the old type may consider itself blessed, but the historian who uses these volumes beholds the lack of exact documentation and the brief summaries of now-lost records. Mr. Bowen, finding Rehoboth well-supplied with narrative histories, long ago undertook the recovery and transcription of every document relating to the early history of the town. From these records he has already drawn two volumes of studies of special topics which are useful to the historian as well as interesting to people who know the town.

Mr. Bowen begins this second volume with a careful, thorough, and undogmatic study of the origin of the town names, Seekonk and Rehoboth. He is the kind of historian who can do such work without becoming prejudiced in favor of his own original suggestions for a solution. The third chapter contains hitherto-unpublished lists of contributions for defense at the time of King Philip's War and lists of Rehoboth soldiers.

The chapter on the counterfeiting activities of Mary Peck Butterworth is little short of startling. This talented member of a distinguished social circle developed a technique for making reproductions and a system of distribution of her product which flooded three colonies with forged Bills of Credit from 1716 to 1723. Finally detected and imprisoned, she was released by a myopic grand jury, and lived to the ripe age of eighty-nine. Model of its kind, throughout, Mr. Bowen presents the genealogies of the twelve families involved in the counterfeiting, including one of her agents who later achieved a distinguished military record.

Another choice chapter in this volume contains complete transcripts of the three hundred warning-out notices found in the Rehoboth records between 1643 and 1778. Here many readers will find the obscure fruit of their family trees, and the social historian will find fruit for study. No comparable record has hitherto been available. The index, which is a model of its kind, contains some 1650 names. The printing, proof-reading, and binding are exceptionally good. In fact, the only fault one can find with the volume is that there is not more of it.

CLIFFORD K. SHIPTON

American Antiquarian Society
World War II Souvenir Exhibition

Communicated by Westcote H. Chesbrough*

The exhibition of World War II Souvenirs opened at the John Brown House on June 3, 1946, and closed June 30. It contained over 500 items, which were insured to a total sum of approximately $15,000. About 820 persons signed our book as visitors. The exhibition probably cost the Society a little under $800.

I think all who saw the exhibition will agree that the articles which were shown were representative and many were uniquely interesting. The display included a large range of objects, including tools of war such as guns, swords, bombs, etc.; curios, such as a piece of German uranium 235, a Burmese Buddha, the doorknob from Hitler’s bathroom at Berchtesgarten, and a tennis cup presented by the Shah of Iran; and also objects of art, such as the oil paintings from China done in the Western manner. The geographical sources of the articles covered all the main areas where American servicemen were during the war. I think also all will agree that the arrangement of the display was remarkably well done. The work of installation was done chiefly by Clifford P. Monahan, the assistant librarian, to whom all credit for this phase of the show should be given.

While the ultimate test of any exhibition is undoubtedly its attendance record, and while our attendance was not as large as we may have hoped, I do not think we did badly. Eight hundred and twenty was the number of persons who signed the book, and reports state that there were many who did not sign.

We were lucky to be able to keep the cost of the exhibition so low. We were able to do this partly because of the great deal of voluntary help which we received. I wish to thank all our volunteer workers. The regular ones were

*This article consists of excerpts from Mr. Chesbrough’s report as chairman of the exhibition committee.
News - Notes

Reader's Digest for December, 1946, contains an article entitled “Roger Williams—First Modern American,” by Donald C. Peattie. In the Providence Sunday Journal for Dec. 8, 1946, a letter to the editor from Addison P. Munroe, president of the Roger Williams Memorial Association, points out that the article errs in stating that Roger Williams' burial place is not known. Mr. Munroe's letter states that "it is definitely known where he was originally buried and where his remains now rest." The letter goes on to explain the finding of Williams' grave and the subsequent transferal and ultimate enshrinement of its contents.

The Society of Colonial Wars in Rhode Island and Providence Plantations has recently distributed to its membership a facsimile reprint of a unique pamphlet in the Society's library: Roger Williams' An Answer to a Letter of Mr. Coddington.

Another recent book of interest to Rhode Islanders is America 1355-1364, by Hjalmar R. Holand (Duell, Sloan & Pearce). In it Mr. Holand elaborates the theory that the stone structure in Touro Park, Newport, familiarly known as the Old Stone Mill, was a Norse church, or the central core of such a building.

New Members of the
Rhode Island Historical Society
Since Oct. 1, 1946

Miss Isabel F. Andrew
Gaspee 5, R. I.
Mrs. David H. Atwater
Dr. Marshall N. Fulton
Mrs. Marshall N. Fulton
Dr. R. E. Gilman
Mrs. Ronald C. Green
Mrs. Ronald C. Green, Jr.
Mr. Chester C. Greene
Mrs. Chester C. Greene
Miss Esther L. Greene
Mrs. Hannibal Hamlin
Mr. Daniel S. T. Hinman
Wakefield, R. I.

Miss Myrtle M. Jillson
Waterbury, Conn.
Miss Elsie H. Martin
Mr. Paul A. Merriam
Edgebrook, R. I.
Mr. Rowe B. Metcalf
New York, N. Y.
Mr. Harry F. Miller
Dr. Edmund S. Morgan
Mr. Arthur R. Potter
Cranston, R. I.
Mr. Rodman G. Rathbun
Miss Mary Sturtevant
Newport, R. I.
Miss Eliza F. W. Taft
Mrs. George A. White, Jr.
East Greenwich, R. I.
Mr. William M. White
East Providence, R. I.
Mr. Kenneth J. Woodbury
West Warwick, R. I.

Spring Lecture Program

Wednesday, February 19, 1947 • • • 8:15 P.M.
DR. ERNEST CAULFIELD
West Hartford, Conn.

SOME COMMON DISEASES OF COLONIAL CHILDREN

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Wednesday, March 19, 1947 • • • 8:15 P.M.
LEON S. GAY, President
Vermont Historical Society,
Montpelier, Vermont.

A NEW APPROACH TO LOCAL BUSINESS HISTORY
Weapons Display in War Souvenir Exhibition