

Charles Eliot



The Palisades of the Hudson.



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AMONG the traces of the great convulsions which disturbed the earth during its progress from chaos to its present condition, there are few so impressive and so grand as those which result from the bursting forth of imperfectly cooled masses of the primeval rocks which first solidified and formed the nucleus of this mundane spheroid but from time to time seem to have become impatient of their confinement by the gradually cooling and condensing superjacent matter, and have



THE CREST OF THE PALISADES.

broken through the crust which was forming over them, and solidifying there have created dykes and sheets of rock devoid of all traces of life.

The instances where eruptions of this kind have occurred of such extent and force as to intrude the partly cooled rock between two layers of the rocks which in the course of ages had been deposited at the bottom of the primeval seas, in such a manner that the mass has cooled

and solidified under pressure and has since been entirely denuded by glacial or other action so as to stand above the present surface of the ground in the form of lofty cliffs, are not very frequent. Wherever they are found they constitute a striking feature in the landscape, from the boldness of the outlines of the dark columnar unstratified masses which the elements cannot wear away perceptibly and which the mighty glaciers have only been able to polish on the surface.

The Giant's Causeway on the Irish Coast is one such outburst of basalt and other examples are found in the far Western States. In Connecticut also, hills of eruptive rock occur, but the most wonderful of all is the great gateway to the American Continent, chiefly the property and pride of New Jersey, but also the delight and glory of New York, and a wonder of the world, the Palisades of the Hudson River, from Hoboken to Haverstraw.

It seems as if this wonderful mass of volcanic rock had burst up from the bowels of the earth through a crevice in the crust, west of the present channel of the Hudson River from Haverstraw to Staten Island and spread out laterally for a mile or more and there solidified. Over and across this dyke of trap rock, as geologists term it, came down from the northwest the great Glacier of the Ice Period, grinding away the softer sandstones and polishing the surface of the harder rocks, and when at last its force and volume waned and it was dissolved, there was left upon the western slope a mass of drift, on the summit a scanty covering of gravel and boulders and on the eastern side a bank of earth which the flowing waters of the Hudson have carried out to the sea, leaving the bare vertical walls of basalt fringed only at the base with a narrow slope of fragments from the cliffs, too heavy to be washed away. It is this eastern face of the Palisades Mountain which has made it famous throughout the civilized world. There are higher cliffs and denser forests to be found, but nowhere on the face of the globe does there exist a combination of 12 miles of a vertical wall of volcanic rock from 300 to 550 feet in height, fringed with a heavily wooded slope, on the banks of a mile wide navigable river and within easy access of four million citizens of a highly civilized nation. Nowhere in the world is there such an opportunity afforded to youth and age alike for a study of the action of the geological forces which have made the earth what it is, as is furnished by a sail on the bosom of the great Hudson River from Englewood to Piermont, where the mighty columns of the rock which have been forced up from the very bowels of the earth, rear their heads 500 feet above the mass of sandstone on which they rest, while on their summit polished by the ice, there lie boulders of rock which have been transported hundreds of miles from their original beds.

THE DISCOVERY OF THE PALISADES.

It is just 372 years since these wonderful cliffs were first seen by civilized man, when in April 1524, Giovanni da Verrazzano, a Florentine explorer, in the French ship "La Dauphine," sailed past Sandy Hook and anchored in the lower Bay. In the ship's small boat, the explorer passed up through the Narrows and the Upper Bay and entered a "very great river, the banks of which were thickly inhabited by people adorned with birds feathers of different colors, who thronged the shores uttering loud cries of admiration."



THE CLIFFS NEAR THE STATE LINE.

The grand cliffs rising on the western shore struck the explorers with wonder and admiration and Verrazzano named the river "La Grande Riviere," and called the land through which it flowed "La Terre de l'Anormèè Berge," the "Country of the Grand Scarp."

Seventeen years later, Mercator on his globe represented the Grande River with its channel filled with lofty cliffs and designated all that portion of the eastern coast of the new world "Anorumbega," and seven years after that a map of the world made for King Henry II, styled the Region of the Grand Scarp "Anorobegra."

Even at that early day, the dwellers on the Palisades must have been few, for while the French for nearly half a century after the discovery of the Grand River carried on an extensive traffic in furs with the natives on its eastern bank, the Manants, as they called them, no records exist of a population on the western shore, nor does the Dutch Historian DeLaet in 1625 mention any occupation of the western shore, although he complains of the Manhattans," a bad race of savages on the east bank of the River," who had always been very obstinate and unfriendly towards his countrymen.



A FOREST GLADE NEAR FORT LEE.

THE FORESTS.

Back of the crest of the cliffs which still remain the wonder and the admiration of the world, there stretches for more than a mile an unbroken forest of the finest natural growth of timber in the State of New Jersey. The State Geologist in his Report for 1895, says of this forest: "From the State line south to Edgewater, a distance of thirteen miles, and for a width of one and one-half miles back from the bank of the Hudson, practically 90 per cent. of the whole area is well timbered. The forest covers an unbroken tract of 11,000 acres. Beginning at the State

“line and extending to one mile below Huyler's Landing, we have, on the talus slope along the river, a mixed deciduous growth, mainly chestnut and oak, from thirty to sixty feet high, varied with pine and hemlock near Huyler's Landing. We give here, as elsewhere, only the prevailing timber, but in reality this whole Palisades forest includes a large number of varieties. Further down, to Linwood, the growth on the talus is more irregular containing a fair proportion of oak and chestnut of good size, with scattering hemlock.”



THE CALDERS AND GREEN BROOK.

“From Linwood to Fort Lee the talus is well wooded, some good white pine being found, but oak and chestnut prevail. From Fort Lee to Edgewater, the river slope of the ridge is well timbered, but a strip of land along the river at the foot has been cleared and occupied by residents. On the flat top and upper portion of the western slope of the mountain from the State line to Edgewater, except some red cedar near the State line, the growth is practically of mixed deciduous varieties, mostly oak and chestnut. This timber ranges from undergrowth to trees forty, sixty and eighty feet high.”

“Diameters of from twenty to thirty inches and heights of from sixty to eighty feet, are not at all uncommon, especially from Huyler’s Landing to Edgewater. Taken as a whole, there are not many finer belts of timber in the State. The land is largely held in such a way that there is comparatively little danger of wholesale deforesting, but this beautiful forest has almost as good a claim to future preservation as the escarpment of the Palisades.”

THE MUTILATION OF THE CLIFFS.

Unfortunately, however, both trap rock and timber have a considerable market value for what are termed practical uses, as distinguished from educational and æsthetic advantages, and the hand of the spoiler has been laid upon both the crest and the face of this mountain range.



MUTILATED CLIFFS NEAR FORT LEE.

The facility of procuring the loose small fragments in the talus of the Palisades has caused them, for many years, to be used for purposes for which such rock is available. During the last century and the earlier years of the present, a very considerable quantity of these fragments were used for ballast for vessels bound to ports the trade with which was chiefly in imports, and traces are still visible of the stone

slides down which the rocks were passed to barges in the river, and bare spots on the talus still mark the places whence the stones were taken. Later on, when the Belgian or trap-block pavements came in vogue, a number of quarries were opened in detached places and traces of them are plainly apparent, not always, it is true, seriously defacing the slope, but in some instances actually adding to the picturesqueness of the shore. Within the last three years, however, the increased demand for small broken stone for concrete and for macadamizing roads, for which the trap-rock is particularly well adapted, coupled with the



QUARRIES AT CLINTON POINT.

improvements in stone crushing machinery and in high explosives have made it possible to use this hard rock to advantage, to an extent not previously practicable. The result has been that along the most picturesque portion of the Palisades, four extensive plants for quarrying and crushing stone have been erected and not only have serious defacements of the wooded talus been made, but the grand cliffs themselves have been partially blasted away, and besides, great annoyance and discomfort have been caused and are increasing to the residents on both sides of the

Hudson River for twenty miles of its most desirable part for residence purposes. Each morning noon and night a series of heavy explosions of dynamite reverberates along the Hudson from Fort Washington to Tarrytown causing buildings to tremble and windows to rattle, and invalids to be very seriously disturbed.

AN UNSUCCESSFUL EFFORT AT A REMEDY.

The State of New Jersey, within whose territorial limits these outrages have so far been perpetrated, has not been unmindful of their wrongfulness. In February, 1895, a law was enacted by the Legislature of New Jersey known as Chapter 28 of 1895 in the following terms:

“WHEREAS, The Palisades situate in this State are liable to be irreparably injured or destroyed unless measures be adopted for the preservation thereof; and, whereas, by the insertion or imposition of proper and appropriate terms, conditions, restrictions and limitations in leases, grants and conveyances of the lands lying under water adjacent to or in front of the Palisades, the threatened injury or destruction thereof may in a great degree be averted:

1. Be it enacted by the Senate and General Assembly of the State of New Jersey, That hereafter the Riparian Commissioners shall not make any lease, grant or conveyance of any lands lying under the waters of the Hudson River adjacent to or in front of the Palisades or adjacent to or in front of the strip of land between the base of the Palisades and the lands under water, unless there be inserted in the lease, grant or conveyance such terms, conditions, restrictions and limitations as will, as far as possible, forever thereafter preserve unbroken the uniformity and continuity of the Palisades, and also, so far as possible, prevent the lands leased, granted or conveyed from being in any way used or devoted to injurious or destructive work or operations against the Palisades, or in connection with or for the encouragement, aid or promotion of injurious or destructive work of any kind against the Palisades.”

While this law appears on its face to forbid future devastation of the Palisades on those portions of the same in front of which riparian grants may not heretofore have been made, it cannot be held to be retroactive or affect the grants already made, which cover half of the entire distance north of Fort Lee, and furthermore the riparian owners contend that the term “The Palisades” applies only to the vertical cliff which forms in most instances the boundary line between owners of the uplands and the talus, and does not apply to the talus, the preservation of which from mutilation was, at the time of the passage of the act, intended to be secured, and this interpretation of the law has been confirmed by the legal adviser of the Riparian Commissioners.

WHY THE PALISADES MUST BE PRESERVED.

Since a systematic mutilation of the features which make the Palisades attractive has been begun, it is necessary to consider carefully why this cliff should be preserved and how this object can best be attained.

First and foremost is the purely sentimental consideration. It is a "thing of beauty," and therefore ought to be undisturbed. If it is to be preserved for its beauty, it must be as a whole and not in fragments.



QUARRY AND STONE CRUSHING PLANT NEAR FORT LEE.

Scars like those made by the working of the quarries now in actual daily operation at Fort Lee, at Clinton Point, and at Bumpy Hook, spoil the whole range in the same way that a battered hat, a crumpled shirt, or patched trousers would mar the appearance of an otherwise well-dressed man. Its beauty depends wholly on the striking effect of the combination of the rocky cliffs with the wooded slope below. If either one is taken away from the other, the effect at once disappears. The cliffs alone, without the slope, present a bold and striking appearance, but the fascinating beauty of the Palisades is due to the richness and variety of the green woodlands that lean so gracefully against the cliffs.

On the other hand, the slope alone, without the cliffs above, loses its distinctive character. It is, indeed, attractive, but it is something that may be seen on the banks of a hundred rivers.

From this standpoint, the extent of territory which must be restricted from defacement, is from Edgewater, opposite General Grant's tomb, to Piermont, a distance of sixteen miles. Not only the vertical wall of basalt, but its approaches at each end, its portals, so to speak, must be preserved from mutilation. Nature has clearly defined these portals. At each end there is a wooded eminence a little back from the river front, leading the eye to a depression in the hill, beyond which there rises a beautiful, sloping, rounded promontory, at whose summit on the river shore the vertical wall of basalt begins, and for eleven miles continuously challenges the passer's admiration by its bold and picturesque front, rising sheer from 300 to 550 feet above the river level and fringed at its base with the picturesquely wooded talus. The State of New Jersey, the State of New York, the American Nation, cannot afford to have this front gashed by greedy contractors.

A FOREST PARK.

But aside from sentiment, this tract of land is needed for the recreation and instruction of the millions of adjoining residents.

From the river front, the summit slopes gradually to the west for two miles. The line of 200 feet elevation runs nearly parallel to the river and about one mile and a quarter distant from the shore line, and the intervening space is covered very generally with a thirty to fifty years' growth of timber. This area of about 8,000 acres, taken in connection with the two approaches extending respectively to Edgewater and Piermont, each comprising about 2,000 acres, offers unparalleled advantages for the site of a woodland park for the cities of Northeastern New Jersey and the Southern Hudson River counties of New York. It is as near to Jersey City, Newark, Passaic, Paterson, Nyack, Yonkers, Tarrytown, Sing Sing and White Plains as the 4,000 acres of new parks of New York City are to the centre of population of the city, and it offers advantages in the way of access by land or water, and of enjoyment of magnificent views, and of driving, wheeling and climbing that no park lands anywhere possess.

WHY THE NATION IS CALLED ON.

As a forest preserve, including within its boundaries phenomenal natural scenery, this tract of 12,000 acres is as worthy of preservation at the public expense as are the 17,565,160 acres of lands in the far West which are now maintained at National expense, but a visit to which involves an outlay of time and money greater than the vast majority of the population can afford. Not one per cent. of the people can ever see those Public Lands, while these would afford daily delight and instruction to millions of our own citizens and thousands from abroad.



BLASTING AT BUMPY HOOK.

But irrespective of all considerations of equity as between localities, the participation of the National Government in the preservation of this territory is called for by consideration of its associations with striking events in the War for Independence, the commemoration of which is even more worthy of perpetuation and of being prominently kept in view, than that of the war for the preservation of the Union, and no memorial of which is kept before the citizens of New York and New Jersey.

It was from Fort Lee on the Palisades that General Washington witnessed on November 16, 1776, the capture of Fort Washington by Lord Cornwallis. As the historian Gordon quaintly tells the story :

“General Washington could view several parts of the attack and when he saw his men bayoneted, and in that way killed, while begging quarter, he cried with the tenderness of a child and exclaimed at the barbarity that was practised. His heart has not yet been steeled by plunging into acts of cruelty.” Two days later he was himself compelled to retire before the British forces which crossed the Hudson and threatened the Continental forces from the rear.

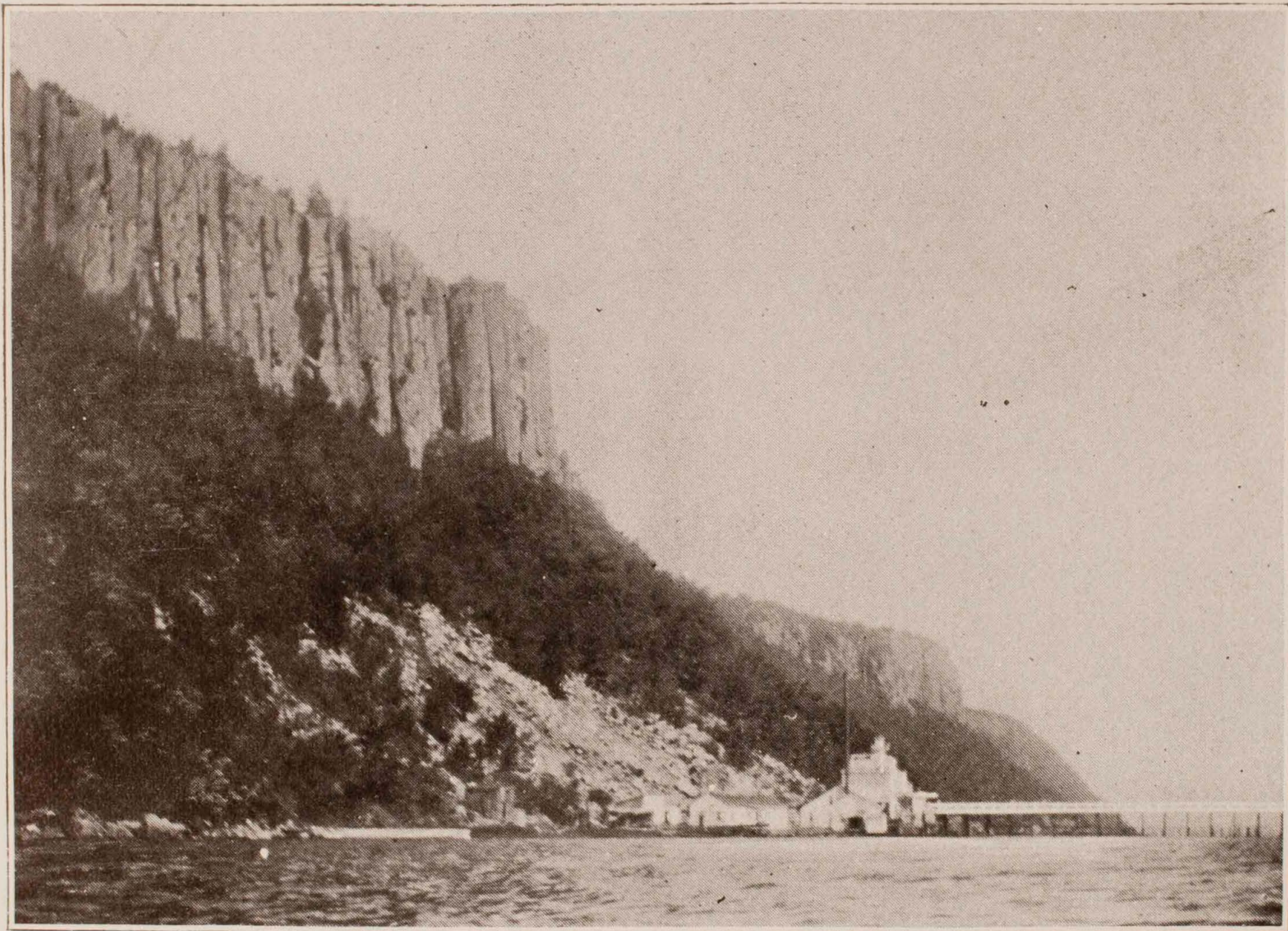
At Englewood, then called Liberty Pole, Mad Anthony Wayne in 1780, assailed the Royalist refugees, who occupied block-houses there, and fired upon boats in the river.

It was at Closter Landing that, on September 27, 1778, General Earl Grey landed, and taking his dragoons up the military road built by Lord Howe, crossed into the valley of the Hackensack, and as described by Gordon “surrounded Old Taapen without any discovery and surprised Baylor’s Horse asleep and naked in the barns where they lay. A severe execution took place and numbers were dispatched with the bayonet. The men being so completely surprised and incapable of resistance, the refusal of quarters when implored has led Congress to deem the execution a massacre, after receiving the best information upon oath that they could obtain concerning it.” And at the northern end of the Palisades is Tappan where Andre was hung.

But in addition to the duty which the Nation owes to itself of keeping ever fresh the memory of the great struggle of the Revolution, to which its existence is due, it owes to its greatest seaport and its commercial and financial metropolis, the establishment in its immediate proximity of an adequate and dignified military post and headquarters of defence against foreign and domestic foes. Every great city needs such a post in its vicinity, for a store house for arms and munitions of war, a training ground for troops of all arms of the service, a rendezvous for the concentration of masses of men and their speedy utilization in an emergency such as has arisen already in several instances and is likely to arise at any time in any great city where thousands of the worst classes of the community are congregated. For ordinary outbreaks of disorder the police and the militia suffice, but in every great city and particularly in the greatest port of entry, there is a foreign alien element which must have kept before it, constant evidence that superior to the Municipality and the State there is a power which can call on any other State or the whole Nation to repress insurrection and anarchy. Those who remember the draft riots in New York in 1863, when for four days a large part of the city was at the mercy of a mob who pillaged, burned and slaughtered all that came in their way, cannot but realize the necessity for the establishment of such a post. Chicago, after the Anarchist riots,

awoke to the necessity and the result is Fort Sheridan on a wooded bluff on the shore of Lake Michigan near the city, a National Military Post.

The Metropolitan District of the country is entitled to and demands from the Nation, the establishment of such a post in a commanding position and within easy access of all portions of the district by land or water. The summit of the Palisades is the only locality around New York which offers the required conditions, and whose acquisition by the United States would serve the double purpose of military protection and the preservation of natural scenery, for both of which millions have been expended by the Nation in other localities.



QUARRY AND STONE CRUSHING PLANT AT BUMPY HOOK.

More than this, it must be considered whether the military force of the United States, both Regulars and Militia, is really in condition to fight any foe.

In these days of advanced military science, all nations but our own are spending enormous sums in instructing their soldiers, both officers and men, in the conduct of operations in the field, such as occur in actual warfare.

Study in books is good, and barrack drill is good, and so is a week's junket in a Summer camp, with a nice parade ground, but none of these

can take the place of practice in field manœuvres on a large scale, on grounds sufficiently extensive.

In Germany the acquisition of extensive tracts of country for the preliminary field training of the army was begun in 1891. Since then fifteen tracts have been bought for this purpose, the smallest of which, Hagenau, is about two and a half miles square. Ten of these grounds are in complete readiness for occupancy by troops. The idea proposed by the German military authorities is to have, if possible, such manœuvre ground for each of their army corps, which will make twenty in all.

These tracts are intended for the preliminary manœuvres of the brigades and divisions of the corps. Each ought to be large enough for a brigade of infantry and division of cavalry to encamp and manœuvre in at once. A German brigade has a strength of over 6,000 men. The ordinary artillery practice ground, three or four miles long by say two and a half miles in width, is too small for these manœuvres, but artillery practice can readily be held on the manœuvre grounds, and many of these grounds were purchased for this double purpose.

The amount of money expended in Germany on these grounds since 1891 is very large. The ground alone of the Truppen-Uebungsplatz for the Wurtemberg Army cost \$3,200,000. The smaller manœuvre grounds which seemed sufficient at first, are gradually being enlarged, and the artillery practice grounds are being enlarged to the dimensions of manœuvre grounds.

The amount appropriated for the purchase and enlargement of these grounds in the single fiscal year 1895-96 was over \$4,000,000. The expenditure for the previous year was over \$1,250,000. This is exclusive of any expenditure made in Bavaria for such purpose, this country having a separate budget.

Among the large tracts acquired by the French Government for manœuvre and artillery practice purpose may be mentioned those at Chalons and Fontainebleau. The French do not seem to have acquired in recent years any very large tracts for manœuvres, but they have been gradually enlarging such grounds as they already possess. Their annual expenditure for such purposes is about \$200,000.

The higher officials in our army know all this, and have more than once within the last three years called attention to the deficiency of posts where such practice can be had by the United States military forces.

In the last annual report of the Inspector-General this subject is thus alluded to in forcible terms:

“There are still posts where exercises under service conditions have been scarcely attempted or have been confined to practice marches and the solution of the more simple problems in minor tactics.

“The number of officers in our service who have had experience in handling large masses of troops is growing less and less each year, and there are many on its rolls who have never seen a brigade of troops. Can a satisfactory condition of instruction exist under such circumstances? Has not the time come when it is absolutely essential, in order to instruct the younger officers of the army how best to apply the theoretical knowledge which they have acquired at the Military Academy and at the



A CEDAR IN A TRAP-ROCK CLEFT ON THE PALISADES.

Service Schools, occasionally to concentrate troops at some central points and engage in a series of manœuvres approximating as nearly as possible to the actual conditions of war, forbidding the exercise of any manœuvre which can be formed while in garrison?

“There was never a time in the history of our army when the officers and men were better prepared theoretically to meet an enemy than now; what they need is practice, and, next to war, a simulated condition of war, with a system of thorough and intelligent inspection, is the best school. This instruction with large units is now more important than ever before. With a new arm, new drill regulations, a large number of well educated but inexperienced officers, the time is ripe for

practice of a practical kind, with forces sufficiently large to simulate war conditions. This is the essential element of modern soldiery life and instruction."

If this be true, and there can be no question of it in the mind of any thinking man, this Palisade Mountain, sixteen miles long and two miles wide, on which there are not one thousand inhabitants, affords the only practicable site on the Atlantic seaboard for a hundred miles or more, for a practice and manœuvring ground for troops of all arms of the service from all of the adjacent States, of sufficient extent and of such varied topography as to be eminently fitted for the purpose, and which is moreover accessible by boat and rail from all parts of New York, New Jersey, Connecticut and Pennsylvania.

SUMMARY.

The Nation needs this range of cliffs, first to preserve its credit, secondly to keep ever fresh the memories of its struggles for its establishment, and last but not least, to educate its citizen soldiery upon, and "in time of peace, prepare for war." The cost of one armed cruiser would pay for it six times over.

There are, therefore, four objects to be accomplished: The preservation of forests and striking natural features, the provision of pleasure grounds for 4,000,000 people, the commemoration of the struggle which made the United States an independent Nation, and the military protection of the chief city of the Nation and the Atlantic Seaboard, and there are three parties to share the cost, the States of New Jersey and New York and the United States.

Five-sixths of the territory needed is in the State of New Jersey and one-sixth in the State of New York. The proportion needed for actual military occupation by the United States, including also the preservation of the face of the cliff, is one-tenth of the entire tract of cliff and forest land which it is desirable to devote to the Forest Preserve and Military Training Ground, and it is only that one-tenth, or about 2,000 acres, which the United States is now asked to appropriate to its own uses, and which the States have ceded to the National Government conditionally on such use. The States themselves can be trusted to do the rest.

J. D. R. Groves.