THE TEXT FOR

HARVEY'S ILLUSTRATIONS

OF THE

Forest Wilds & Uncultivated Wastes

OF

OUR COUNTRY.

"THE HALT OF THE EMIGRANTS."

BOSTON:

PRINTED BY DUTTON & WENTWORTH.

1851.

HARVEY'S ILLUSTRATIONS

OF THE

Forest Wilds & Uncultivated Wastes

OF

OUR COUNTRY,

WITH A SKELETON MAP OF THE GULF STREAM AND THERMAL ZONES, EXPLANATORY OF THE PHILOSOPHY OF CLIMATE; TOGETHER WITH MUCH INFORMATION RELATING TO THE EARLY ASPECT OF NORTH AMERICA,

BEING

AN EPITOME OF THE INTRODUCTION

TO THE

EIGHT LECTURES

WHICH THE ARTIST HAD THE HONOR OF DELIVERING BEFORE THE MEMBERS OF THE

Royal Institution of Great Britain,

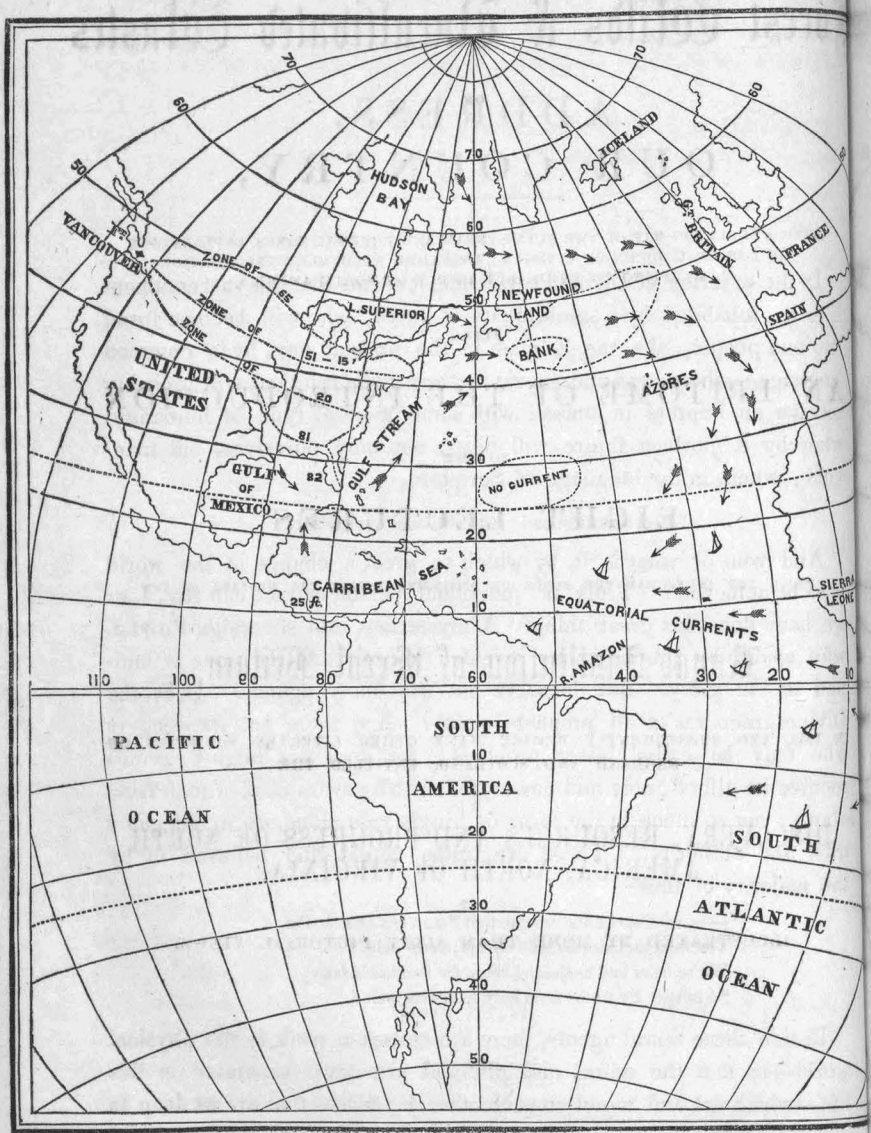
IN 1849, AND SUBSEQUENTLY BEFORE MANY OTHER LITERARY SOCIETIES OF ENGLAND AND SCOTLAND, ENTITLED THE

DISCOVERY, RESOURCES AND PROGRESS OF NORTH AMERICA, NORTH OF VIRGINIA,

ILLUSTRATED BY MORE THAN SIXTY PICTORIAL VIEWS.

Geo. Harvey.

BOSTON:
PRINTED BY DUTTON & WENTWORTH,
No. 37, Congress Street.
1851.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ADDRESS.

In the ordering of Divine Providence, it seems that this vast continent is to be inhabited by a multiplicity of races, who will become fused into one people, like the English in the present day, by a common language; whose laws and literature, and even religion, will probably receive an impress in unison with some general type of humanity, whereby a glorious future will bless, not only ourselves, but mankind; when, in the language of Scripture,

"Righteousness and peace shall kiss each other."

And who or what is it, by which so great a change in the world is to be achieved? Truly no individual person or race can say, I or we have done this great thing. A mysterious and sovereign POWER, who spake by prophets, has revealed himself, and HE alone is entitled to the glory. But does HE not use many agents? Does the Divine grace make all prophets equal? Are there not messengers who may be called lesser prophets; for does not mighty genius receive its gift of grace and power, for earth's government of men from above; not so much in the form of kingly rule alone, as in delegated trust and authority? These are truths taught and believed in by the majority of those

"—— who speak the tongue that SHAKSPEARE spake,
The faith and morals hold that MILTON held,"
We're heirs and conjoined heirs, for freedom's sake;
So taught, by truths from holy fountains well'd.

Beside these moral agents, there are causes at work in the physical world—in fact the moral and physical are never separated in this life—which act and re-act on each other, by causes that are as deep as old ocean's floods, and in the intellectual one as high as bright heaven. They both co-operate to bring about that consummation the inspired prophets have recorded. It is an indisputable fact, that material things produce or greatly change man's thoughts and actions. "For we cannot handle pitch without being defiled," or drink of wine to

excess without being drunk, nor eat much of opium without stupefaction ensuing, even terminating in death.

We propose briefly to explain our meaning. In the first instance, we will look at the influence which climate has on body, and consequently on mind. The map before us will do useful service in the explanation.

Every one has heard of the Gulf Stream and the trade winds, but few have speculated on the physical influences these have had in preparing the intellectual soil, so to speak, whereby the genius of the two great men we have named, Shakspeare and Milton, besides a host of others of scarcely lesser note, who have been enabled, by the health-giving vigor of a mild climate, to flourish and mature heaven-born thought, causing that peaceable admixture of many races into one people, witnessed in the parent land, and with whom we form, in a catholic sense, an integral part. This fusion — this intellectualizing — is going on in the present day with ourselves, for GOD is "raising up a mighty people, zealous of good works."

Now we propose to speak of this Gulf Stream. The diurnal motion of the earth from west to east carries its fluid and ærial portions with it, but as these less ponderous bodies are attracted by the planets and worlds around, they—the atmosphere and the ocean—do not move with the same velocity as the solid portions of the earth. Hence the ærial tide called the trade winds, blowing with slight modifications continually from the east to the west, and the equatorial current of the ocean passing in the same direction round the Cape of Good Hope, are the effects.

Philosophers have generally contented themselves by attributing the trade winds to the rarefaction of the air by a vertical sun. This explanation, however, fails of application to the ocean current. The rarefaction, both of air and water, doubtless co-operates with the diurnal motion of the earth, but of itself, it cannot produce those deep currents which experiments have demonstrated to exist in the middle of the Atlantic.

The equatorial current, when it reaches the coast of the Brazils in South America, is for the most part deflected by the north-west direction of the land, into the Caribbean Sea, where its further western course is impeded by the Isthmus of Darien. Here the level of the water is said to be twenty-five feet higher than on the western side, and two feet still higher in the Gulf of Mexico, where the current receives the drainage of the Mississippi Valley. This great mass of accumulated waters now finds an outlet between the Island of Cuba and the Florida Cape, at the rate of about one hundred miles in the twenty-four hours,

and thence pursues a parallel course along the coast of the United States, till it reaches the polar currents coming from Davis's Straits and the waters of the St. Lawrence, where a large eddy is formed at the south-east part of Newfoundland. Here the force of the Gulf Stream is much weakened, and allows a deposit of whatever is borne along or rolled over at the lowest depths. The deposits thus brought from the south, have formed the Banks of Newfoundland, and which are known to be increasing in height, by a comparison of the soundings of the present day with those recorded in ancient charts.

Another phenomenon has of late years been observed, which doubtless somewhat accelerates the apparent increase. It is the gradual upraising of Nova Scotia, attributed to volcanic action, and is similar to the one which has been going on for centuries in Sweden and Norway.

These Banks of Newfoundland constituting the fishing ground for Great Britain, France, Holland, and for ourselves, extend in an easterly direction, and from recent soundings are found to extend to within a few hundred miles of Ireland. The dotted marks on the map describe the form and direction of this embryo continent.

There is not a particle of rock which the surf of the ocean wears away from the shores of the Brazils or from the West India Islands, but, in the process of time, is borne along and deposited on these banks. Thus we perceive there is a vast continent being formed, and the aggregation or growth observed in the course of ages, is capable of being recorded, so that future generations, if not the present, can predict when dry land will appear.

The warmth of the waters in the Gulf of Mexico is 82 degrees, but as it passes north, it loses about one degree of heat for every three degrees of latitude. When it reaches the confluence of the waters issuing out of the Gulf of St. Lawrence and the cold polar current, it suddenly loses a great part of its warmth and gives rise to the fogs prevalent in those regions. The main body of the Gulf Stream, however, lying further south, is not so much affected as that near the Banks, but is driven across the Atlantic by the prevalence of westerly winds, and in its progress carries a gradually diminished warmth to the British Islands. The warmth thus derived causes that peculiarly mild temperature so singularly characteristic of their climates. Ireland, receiving its first warm embrace, is continually bedewed in gentle showers, rapidly alternating with a hazy sunshine, and produces that perpetual verdure which entitles it to receive the appropriate name of Emerald Isle.

The current of the ocean is hence deflected southerly along the

western shores of France, Spain, Portugal and Africa, till it joins the equatorial current passing round the Cape of Good Hope, first alluded to. The circuit now described, may be termed an immense oceanic whirlpool, which is computed to take about three years to complete its course.

Much more could be added to this mere outline, but enough has been said for our purpose to show how Great Britain derives her temperate climate. This mild temperature has been thought to contribute to that healthiness whereby her great men have been enabled to obtain a clear-headed perception of deep truths, and which has enabled them to impress their convictions on the minds of others less intellectually gifted. Those who are familiar with the names of the great men whom Britain has delighted to honor, besides others who have passed unnoticed to the tomb, need not be told that such a galaxy of genius never shone forth in any other land within the like narrow limits.

Climate, however, unaided by other causes, it seems is not sufficient to produce the intellectual effects alluded to; there must be a fusion of blood also. Continual intermarriage, which is doubtless the origin of what is termed race, has been forbidden by revelation, from its tendency to strengthen animal propensities rather than develop intellectual ones. The English and the Americans, therefore, having descended from many progenitors, may be a cause for that activity of intellectual and moral energy we witness.

We have now briefly shown how the continent of America, by its geographical position, has allied itself to Europe, through its physical influence on climate but more particularly to Great Britain; and we are witnessing in the present day how she is repaying the material good by her intellectual maturing, and impressing on us moral benefits, which when adopted by us will become world-wide in their operations. Providence has doubtless ordained this action and reaction, this interchange of physical and moral benefits, for the perfecting of humanity, whereby, in the fulness of time, the world is to witness the millennium foretold in the Scriptures.

We have spoken, incidentally, of the prevalence of westerly winds in the fortieth and more northern parallels of latitude. We have, however, said nothing explanatory as to the cause producing them. We will briefly do so now. Those who have witnessed the operations of a fan bellows, or of a fanning mill, will have noticed that as the wind which is projected at the outer edge of the fan, will also have noticed the current of air drawn in through the opening left for the purpose at the axis. This phenomena is somewhat analogous, for the

north polar currents, both of air and water, before they tend to the equator, move with an uncertain though general direction to the south-east, south, south-west, and finally, near the equator, due west, where they are known as the trade-wind and the equatorial current. Thus, this wind and the ocean current may be compared with those effects produced by a fanning-mill in motion, as can be easily demonstrated by turning rapidly a large globe with a rough surface. You will perceive, by using a delicate feather, very little air moving near the axis, but as you approach your test, the feather, towards the equator of the model, you will witness the phenomena described as prevailing on the surface of our earth, with this difference, that electricity, evaporation and clouds are continually doing their appointed offices to alter and modify the general laws we have thus briefly attempted to unfold.

Let us now apply these facts to the north of this continent. The winds, sweeping across from the west, bring with them the vapors of the Pacific, and also something of the temperature of the ocean, which is left, in its eastern progress, for the most part, on the west of the Rocky Mountains. On the east of that barrier, the showers of rain are not as frequent as near the ocean. The earth, therefore, in summer, becomes parched, and droughts are of frequent occurrence. In July, August, and September, these prevalent winds, passing over a heated surface, raise the thermometer to 90 and sometimes even to 100 deg. In winter time, the reverse takes place, for when snow covers the earth a north-westerly wind will send the mercury in the thermometer down to twenty or thirty degrees below zero. The thermal lines drawn on the map will explain the vicissitudes of climate. You will perceive that as you recede from the Pacific shore how very marked are the alternations of heat and cold, and that near the ocean the extremes of temperature are nothing like as great. The climates of the western coasts of Europe and those of America, are, therefore, very similar; those of the former, however, are more genial, arising from the Gulf Stream circling around them, bringing a warmer temperature than otherwise could be obtained.

What we have said, is not a tithe of the interesting matter which the subject is capable of affording, but which we think, were we to indulge longer on the theme, might prove tedious to a mixed audience. We have, however, a few words to say in regard to the suggestion emanating from that very distinguished philosopher, Baron Von Humboldt. He has recommended that the surface of the globe should be divided into zones of temperature, as being more exact in noting climatic differences than those indicated by degrees of latitude. His

suggestion is, that there should be three lines, which he terms thermal zones. The one recording the average temperature of the entire year, to be called isothermal,* that of the winter, isocheimal, and the third, that of summer, isotheral.

These lines you will perceive centre at Fort Vancouver on the Pacific shores, and diverge in a remarkable degree as they proceed eastward, till they reach the Valley of the Mississippi, from whence they pursue a nearly parallel course to the Atlantic. The average summer temperature of sixty-five, as marked on the map, however, is greatly affected when it approaches the vicinity of the Lakes. The radiating and absorbing properties of water are the causes of the curvings noted on the map. These lines or zones, indicate the average heat of the seasons; for instance, the isothermal zone of 81, in Florida, shows the temperature of the year to be but one degree cooler than the waters of the Gulf of Mexico.

From what we have said in regard to the causes producing difference of climate, it is very obvious that the seasons of this continent can never approximate in character to those of the British isles. How far the severe vicissitudes of temperature, to which we are subject, will affect our moral and physical characters in the course of many generations, and alter the original European type, intellectually, it is idle to speculate upon, but we may hope, judging from what we perceive has already taken place, that no deterioration will ensue.

This department of our evening's amusement we will now dismiss, leaving the outline just gone over, to be filled up by other concurring knowledge which study and your leisure may afford. We will, however, remark that the subject so briefly outlined this evening, as to occupy but a few minutes in discussing, in the lecture delivered by Mr. Harvey, at the Royal Institution of Great Britain, consumed nearly an entire hour.

* From the Greek "iso," equal; "thermal," heat, as applied to the average temperature of the year; isocheimal, equal or average winter, and isotheral, equal or average summer.

PICTORIAL ILLUSTRATIONS.

The arrival of a Settler's Family at their new home in the Wilderness.

The scene before us represents an important epoch in the life of a western pioneer; it is the arrival of his wife and family at their new abode.

A common course for those of yankee origin, when their growing families render a removal to a new country a matter of prudential economy, is to discuss the matter for some time before putting the project into operation. When a removal has been determined on and the old homestead disposed of, the husband will start with his eldest son to the chosen country, which the advisory letters perhaps of some former neighbor have pointed out as desirable. Autumn is always the preferable time. The journey over, the land selected and secured, the husband and son will set to work to prepare a habitation, having first informed those left behind of their chosen locality. The letter will contain some prudent counsel how to economise time and money in making the transit—things of no small moment to persons of moderate means.

The kind neighborly feeling, existing almost universally throughout a new country, enables a fresh comer readily to obtain voluntary assistance from those residing within a distance even of ten miles, to erect the first buildings, the side-walls and rafters of which are soon thrown up, for "many hands," the proverb says, "make light work." One of these enclosures will be finished as a dwelling, the other for a shed or barn. This free task of his future neighbors over, they will hasten home while daylight continues. The last kindly greetings shouted, perhaps out of hearing, and the pioneer and his son will be alone in the deep recesses of a vast gloomy forest. But nothing daunted, they busily employ the remaining light in selecting some suitable straight rifting tree of pine or ash, out of which to make the plank for their roofing. The tree cut down and into suitable lengths, will be car-

ried within the wooden log walls of their future home, and afford them occupation for many a coming evening in fashioning. The flooring has to be laid, the door to be made, the chinking of the interstices of the logs to be done, the chimney of laths, tier on tier upraised, duly embedded in clay, and the fire-place made safe by the same material, all of which being done, the habitation is ready for the expected arrival of the rest of the family. Till this event occurs, no time is lost in getting other things prepared for comfort or convenience. The barn or shed has to be roofed for the cattle, the future barn-yard enclosed, and a thousand other things done, yet the whole stock of tools consists of no more than an axe, a saw, an auger, a hammer, and a few nails. But long before all these improvements are completed, winter has set in, snow covers the ground, and all the swamps and swales, marshes and brooks of the trackless forest, are frozen up, so that travelling becomes possible, which otherwise were impossible. At last the remaining part of the family have arrived, to the great comfort and delight of the two who have been sustaining the character of hermits.

The scene before us depicts this arrival. The ox sleigh, loaded with furniture,—conspicuously on the top of which is seen the Boston rocking chair,—has preceded the cutter, or family one-horse sleigh. The latter has followed in the slow wake of the oxen, through the forest, and, judging from the iron kettle hanging on the sleigh's back, the churn and the trunk, much cooking has been performed throughout the journey. The churn has held milk, the produce of a cow, purchased perhaps at the last settlement, and the chest has served the purpose of a convenient cupboard wherein to store the victuals required throughout a long journey.

The family will be soon comfortably installed in their new abode, for, judging from the large volume of smoke, a roaring fire is crackling on the hearth. A new home, rich in the treasures of hope, is before them, and where love and hope illume a hearth, there is happiness. Much labor, however, has to be done before the forest can be made to change its character. We will rapidly sketch the routine of a year's occupation. After the family are thus domiciled, as much land as is intended for cultivation the ensuing season, is under-brushed and girdled. The trees in the immediate vicinity of the dwelling are felled, and the leisure of stormy days filled up by making wooden troughs to contain the sap of the maple tree. Spring arrives, and during the alternations of frost and thaw, the year's supply of sugar is made from the much-prized maple tree. Then comes the sowing of wheat and oats, amidst the girdled trees, which are harrowed in by a

rudely constructed harrow, made out of the crotch or fork of a tree, bored with holes and stout plugs of wood driven through for teeth. Thus completed, you have a rudely constructed implement of husbandry, as fitting as the most ingenious mechanic could invent, and yet it has scarcely taken an hour to make. This, dragged by oxen, scatters aside the vast accumulation of dried leaves rotting on the ground. The pioneer now waits for the promised return of increase. Then comes planting of corn and potatoes, wherever a bare spot of earth can be found unoccupied by roots of trees. It is done without any regard to straight lines, so that the farming appears of the most slovenly description, yet none more fitting can be pursued. Seasons roll on their appointed course; the settler grows old as his prospects brighten, for it takes a life of toil before the gloomy aspect of the forest can be converted into the cheerful sun-light of the open landscape, but a career of humble usefulness, as truly honorable and worthy our homage as the warrior's, blesses and crowns with happiness all those encompassed within the circle of his charities.

A "Girdled Clearing."

We may suppose this to be near the same chosen spot of the former view, but taken after an interval, since the arrival of the settlers, of some six or seven years. The girdled trees now standing, are few in number, so that little remains of them excepting a few of the principal limbs; all the smaller branches and twigs have rotted and fallen off. Whenever spring comes round and frost leaves the ground, many of these trees fall prostrate, owing to the decay of the roots. The farmer, therefore, has to go into his field with fire, axe, and oxen, to remove them, before the land can be ploughed. The men are resting for a moment, and are indulging in some tale of gossip, which every backwoodsman relishes to hear. The process of girdling is a very simple one. A rim of the bark is cut out entirely surrounding the tree, so that no sap can for the future ascend. The tree therefore soon loses its foliage if it is done while in leaf, but if before spring arrives, no buds ever expand; the tree consequently dies. This process is one very easily accomplished; a single man being enabled to girdle an acre of the heaviest timbered land in a day; but although a great deal of ground can be thus rapidly brought into culture, yet in the end it is more costly than entirely clearing it by "chopping, logging and burning."

Thornville, Ohio, through an opening of the Native Forest.

This summer view portrays the aspect of heavily timbered land.

The opening enables a pleasing contrast to be seen in connection with the gloomy shadows of a forest, for the little hamlet nestles quietly amidst a surrounding wilderness. The tall trees, growing closely together upon a rich alluvial soil, are drawn up by the heats of summer as though each tree was struggling with its neighbor for a copious supply of sun and air. The road accident, representing a broken wagon, is of frequent occurrence in the West, owing to bad roads; but they are not considered of much moment, as the skill and ingenuity of a western man enables him, by a few withes, as a substitute for ropes, and a pole for an axletree, both of which the neighboring woods afford, expeditiously to repair the damage so as to proceed in a make-shift manner to his destination.

Thornville, Perry County, Ohio, was first settled about 1810; land was then so cheap in the neighborhood that a man of the name of Beesacker purchased twenty acres for an old black mare; luckily for him, in laying out the county, two important roads intersected his purchase. He immediately had it surveyed into town lots, christened it New Lebanon, and lo! an embryo town sprung into existence. This took place about 1815. Within ten years more it rose to the dignity of a post-town; but as there was a post-office at another village of the same name in the Commonwealth, it was rebaptized by the name of Thornville, from being situated in the township of Thorn. The first villager was Peter Cool, who opened a tavern for the public good, and amused his leisure by making chairs for his private emolument. Peter is now a man in easy circumstances, and might safely give up business, and loll out the rest of existence in one of the easiest of his own chairs; but his generous devotion to the public good still induces him to fulfil the hospitable station of Boniface. Almost coeval with the tavern of the worthy Peter is the workshop of Israel Penrod, a redoubtable blacksmith; for the tavern keeper and the blacksmith are the Jachin and Boaz of a new town in the wilderness. Israel, like Peter, remains unchanged by prosperity, and the din of his hammer and anvil, which once rang through the forest, now resounds through the streets of Thornville. To these primitive fathers of village prosperity have succeeded the usual throng of shoemakers, carpenters, tailors, store-keepers, lawyers, and doctors, until it has attained a population of three hundred and fifty persons, with two churches and two taverns, in addition to the patriarchal and public-spirited establishment of Peter Cool. It is said, the worthy inhabitants of Thornville take a classical, though somewhat pedantic, pride in comparing the original founding of their village with that of ancient Carthage—the latter having been en-

compassed by the hide of Queen Dido's bull, while Thornville was originally comprised within the hide of Beesacker's black mare.

Owl Creek, Ohio—an Autumnal View.

The rich bottom lands of Owl Creek are famous in the Commonwealth of Ohio. Traversing nearly the entire course of this stream there are a succession of wooded plains, in the midst of which once existed lakes or ponds, made it is supposed by beaver dams. Throughout many ages these ponds were the receptacle of all that floods and heavy rains floated from the hill sides. A vast accumulation, therefore, of vegetable matter, settled at the bottom, has given the drained lands rank fertility, which causes them to be highly prized by the farmer.

The stream is gentle in its current, and in many places glimpses of the picturesque, lengthening with the charms and beauties of a winding perspective, make it a famous spot for the artist. We will follow along the shore for a short distance to point out some of its beauties. Here, high above us, we notice the bright blue sky glistening through interlacing boughs of trees that overarch the rippling waters. Softly the stream glides over a pebbly bottom, or leaps with a sparkling light against green mossy rocks. Now we come to an umbrageous nook, where, on the smooth surface of a dark deep pool, not a ruffle of air distorts the mirrored picture. How beautiful it is! The trees seem to hang over it, Narcissus like, enamored of their tall and graceful majesty.

Let us walk through the woods. Now that we are removed from the margin of the stream, we are no longer enveloped in a tangled mass of underwood. Look above, and mark the towering heights of the trees before any limbs spread forth—and there, through yonder opening, see the declining sun lights up those scarlet leaves of the maple, which autumn has clothed with its well known livery. That lower bough, from the dark shadows everywhere surrounding it, has the intense brightness of a flame of fire! Do you notice the patches of moss, more or less abundant on every tree? We know by that sign we are travelling southward. Turn round and you can scarcely believe we are in the same woods, so free are these forest monarchs from wearing on their sunny sides the mottled robe which cloaks their exposed northern one. It is thus the moss serves as a compass to hunters on a cloudy day. Hark, a waterfall! Now we catch a view of a sunny lake; but fatal to our romance the measured splash of a water-wheel tells us that the wild holiday life of the stream

is at an end. It has been subdued by mechanical genius to the gainful purposes of man.

Here, on this prostrate tree, let us rest awhile, and meditate on the weary pilgrimage this little stream at our feet has to perform before it mingles with the ocean. Thus for fifty miles it pursues its obscure and modest course, under its own humble name of Owl Creek. Then having formed a junction with the Mohiccon, it is known as White Woman's Creek for fifty miles more, when it enters the Muskingum. Now enlarged into an ample volume, it rolls onwards for ninety miles to Marietta, where it unites with the Ohio. Forming a part of this beautiful and majestic river, it winds gracefully but proudly along for eight hundred miles further, till it glides into the turbid and overwhelming tide of the Mississippi, and then has eleven hundred miles of journeying to make before it empties itself into the Gulf of Mexico; making altogether a pilgrimage of upwards of two thousand miles! Does not your respect for this little pilgrim stream rise, as you learn the great career it has to run, and the mighty fellowship in which it has to mingle: but such is an emblem of human life; and many a one who has made the most noise in the world, and filled the greatest space in the public eye, has had no greater beginning than little Owl Creek.

A Pine Forest.—Winter.

The tall straight growth of the pine tree is remarkable. In many parts of Upper Canada, these trees attain the height in some instances of more than two hundred feet. Their age is also astonishing, for they are frequently a thousand years old. This fact may be ascertained by counting the concentric circles after the tree is felled, each circle indicating a year's growth. These forests are valuable for their timber and not for their land. The soil is mostly sandy, and the slight depth of decayed matter resting on the surface, is soon exhausted of its fertility, when the forest is subdued to agricultural purposes. Such lands, if cleared and not cultivated, are soon overgrown with young oaks. The uniformity of this change has puzzled the thoughtful for a theory to account for it. Some are of opinion that acorns have lain for ages buried beneath the soil, preserved by the resinous quality of the pine leaves which have annually fallen and covered them over. Others, that squirrels and birds bring them from the neighboring forests, and, leaving them, moisture and the congeniality of soil causes their rapid germination. Another idea has been started of soil alone producing a spontaneous and new species, without the intermediate agency

of seed; a kind of alchemy, which few persons in the present day are willing to believe in.

The tree which has fallen in front of the log bridge, has effectually prevented the travellers from proceeding till it is removed; and as persons seldom undertake a long journey through the woods without being provided with an axe, the obstacle is soon moved aside. In most instances when trees fall across the track—for in remote districts the highways are not worthy the name of roads—they are avoided by going round them. In the present instance, the marsh on one side and the frozen brook, with the steep banks in front, compel them to use the bridge; and therefore, as they are the first to cross after the barrier has fallen, there is no alternative but to cut it away.

A Cedar Swamp, with a Dioramic effect of approaching night and the corruscations of the Fire-Fly.

Few aspects of the forest are more forbidding in nature than those presented to our view in the present picture. The dark and ragged character of the foliage of the cedar; the weeping melancholy droopings of dank moss, hanging like the shreds of poverty from every decayed or broken limb; the confused, scattering and tumbling appearance of the trees, some of which with their slimy roots project above the pools of brown humus-stained water, and their sides covered with thick masses of moss, are all in gloomy unison with each other. Yet such places are coveted by the prudent farmer, for although it takes an age to subdue the land to a verdant meadow, yet by drainage and judicious management the swamp is finally a valuable grass field. In a climate like ours, low land to a farm is essential, for in dry summers the upland pastures are sure to become parched and burnt up, when the only herbage to be obtained for cattle is to be found in such reclaimed swamps as the one before us. In the meanwhile, the durability of the cedar tree timber forms no small item of its utility for fences. A common mode of speech in the West, conveying the idea of permanence, is the saying, "as eternal as a cedar fence."

Bears, wolves, and foxes prefer the seclusion which the recesses of a swamp afford; they are also inhabited by snakes, toads, and lizzards; but as if to atone for this congregation of wild and hideous denizens of the forest, nature has made it the abode of the sparkling, beautiful little fire-fly, which, as soon as night begins to enshroud the earth with her dark mantle, may be seen flitting about in countless myriads, lighting up every object with their bright corruscations of phosphorous light. However numerous the representation may appear of these sparkling insects

now in motion, in the mimic scene before us, they are not exaggerated in number from those seen in nature. We notice the morning dawns.

An Oak Opening.

After having passed over a region of country extending from the Atlantic a thousand miles westward, once covered with a heavy growth of forest timber, of which the six preceding illustrations will enable you to form a tolerably correct idea, we come to a region where the timber ceases to grow so compactly together. These places are generally called plains or openings. The one before us is composed of oak, and is therefore called an oak plain or opening. The little piece of blue distance in the picture is, in nature, after a long sojourn in the gloom and shadow of a deep forest, inconceivably delightful. The mind, on coming to such a landscape, seems to expand and partake of the sunny aspect of the scene around. With very little effort of the imagination, we may in these regions suppose ourselves to be wandering amidst copses of trees planted for ornamental purposes.

The incident represented of travellers halting, is intended for a group of emigrants from the Southern States. The sorry and jaded plight of the horses, the ragged dress and the absence of household furniture, show the travellers to have been poor, but who are now seeking a home in a new State, devoid of everything excepting a few cooking utensils and their wagon and horses. The contrast in provident habits, intelligence, and education, of the emigrant from the New England States, and the one from the slave States, is very marked.

The first scene exhibited this evening, and the present one, therefore, form strong contrasts to each other.

The Burning Prairie.

Westward of the regions of the forest and wooded plains, we come to the open prairie, where in some parts one may ride day after day, over a plain of unbounded fertility, without meeting a human being; where the sun rises out of the green grass, courses through the heavens, to set again behind a similar horizon. In other districts the prairies rise one above another in vast plateaus or sterile plains. Sometimes the country is like an ocean, when its heaving waters have slightly subsided after the fury of a tempest. There is the same undulating outline of waving surface, the same boundless and monotonous expanse; while far in the distance appear islands of trees, altered by the mirage of the atmosphere, so as to resemble land looming over a misty horizon of water; swell after swell, island after island succeed

as you travel onward, till the mind becomes wearied in contemplating the pulseless solitude.

The burnings of these prairies, which occur almost every autumn, are extremely terrific, especially in the rich bottom lands, where the rank luxuriance of the soil matures a tall growth of grass, flowers and weeds five or six feet high. In such places and at such times, death is inevitable if found within their precincts. Even birds sometimes fail of escaping above the fierce blasts of the flame, which rise up with great suddenness, and flash and leap many yards in advance of that which burns along the surface. The scene before us is an upland prairie on fire where escape is possible. The Indians and horses, antelopes and bisons, are therefore striving with might and main to reach some neighboring bluff or river to escape from the general conflagration.

Moon Rise on the Prairie.

We have here a representation of a party of hunters securely sheltered under a ledge of rocks, where a small stream and a neighboring copse of trees afford them both water and fire-wood. The party is composed of three persons, an Eastern man, a Kentuckian and an Indian. The two latter have caught the sound of feet, and are prepared for a surprise either of game or an enemy. We perceive, however, the cause of their alarm to be a herd of bisons coming over the brow of the hill. These hunting expeditions are full of exciting adventure. Those who have read Ruxton's tour to the Rocky Mountains, must have been much interested in his narrative. The fearless energy and fortitude a slender, genteel young man, accustomed to all the refinements of London society, displayed during many months' wanderings in the remote West, is most surprising. Nothing daunted by his former perils and dangers, he ventured once more, and proceeded on his journey as far as St. Louis, where sudden illness seized him and terminated in his death. Mr. Harvey became acquainted with this gentleman while in London, and found him accomplished, courteous, polite, and refined, and to judge from his fair and handsome visage, he could not have numbered more than twenty-four summers.

A Sedgy Marsh after Sunset.

In many places these marshes are very extensive, and are at present perfectly valueless, yet if combined capital, under the direction of competent engineers, was employed in draining them, the land would become of more value in many instances than that covered by heavy forest timber. The marshes, for instance, through which the outlet of Cayuga and Seneca Lakes takes its course, are of the character here

represented. The ignis fatui, or "will-o'-the-wisp," seen in the corner, may be frequently observed on a calm evening in such places, when a sultry sun has fermented the luminous gas from a mass of decayed vegetable matter stagnating beneath.

A Beaver Dam and Colony.

The early records of the scenery, resources and curiosities of this country, are all more or less tinctured with the marvellous. In searching amidst the vast accumulation of books and manuscripts preserved in the British Museum, Mr. Harvey met with some startling and wonderful accounts written by one of the first travellers who had penetrated into the interior. Everything he described was gigantic, astonishing or marvellous. For instance, the habits and instincts of the beaver were all overlaid with the romance of his imagination. He represented them as imbued with reasoning powers, and living in a state of society where they acknowledged a chief or king, and a degree of moral order subsisted superior to that observed by the aboriginal natives of the country. He described them also as building houses two and three stories high, with underground streets, and storehouses where their provident habits caused them to lay up provisions for their winter's sustenance. The prosaic facts, the simple unadorned truths, however, when duly narrated, deprives them of such intelligent powers. Some beavers in peculiar situations, where there is a suitable bank of clayey loam, will,—instead of constructing the dome-covered habitations, such as are represented in the picture before us,—excavate a few cells, which they line with leaves, and sometimes connect with others above or on the side. They seem also to have an idea of the rights of property, for if a depredation is committed, a quarrel will ensue, and others of the colony will sometimes assist in punishing the delinquent. These facts seem to be the foundation on which the writer in question has built up his superstructure of marvels, at least as far as streets, houses and moral government is concerned. Their instinct of constructiveness,—as the phrenologist would term it,—as exemplified in fashioning their round dome habitations of stakes, wattles and mud, is extremely curious, but perhaps not more so than is manifested by many birds.

When a colony of young beavers find it necessary to emigrate from the parent stock, some sagacious old one will wander the country, in quest of a suitable stream whereon to commence their labors of constructing a dam. This determined on, the time of departure for the emigrants arrives, but it is doubtful if there is any leave-taking or demonstration of regret as with mankind, but which has been most pathetically described by the writer in question. They arrive at the se-

lected stream and forthwith commence their labors by erecting a dam. Nature has furnished them with four incisor teeth peculiarly adapted to their wants, for, by gnawing asunder any suitable tree inclining from the bank, and then, after it has fallen, dividing it into suitable lengths, these logs are guided down the stream, till, reaching the fitting place, they are securely lodged, generally where some projecting rocks afford strong abutments. The first logs thus placed, branches, twigs and leaves are stuffed in below, and covered with stones and mud till it is made water-tight, so that the stream flows over ; other logs are then added. The same process is continued, and when the required height is obtained they proceed with the construction of their dwellings near the water's edge. Having chosen the shelter of some leafy group of trees, to protect them from the fierce sun of summer, they force into the earth in a circular form a number of upright stakes, which they wattle together with twigs and sticks, plastering them well with mud as they proceed, bending the topmost over so as to form a dome. The whole is then coated over by degrees with mud to the thickness of a foot or more. Thus they have a habitation tolerably secure from the intrusion of all but man. The communication is scooped out with their fore paws, which are webbed, and are as suitable for such purposes of digging and plastering as a mason's trowel. The passage is always made to terminate some distance beneath the water.

It is supposed by naturalists, that the use of the pond, is,—as Paddy would observe,—for a play ground, for the beaver delights in gambolling and frolicking in still water. The view before us lies on one of the tributaries of the Thames, in Western Canada, and is represented in the spring of the year.

The same View in Autumn, after drainage and cultivation.

The early settlers of the country soon found out a great desirableness in the improvements made by the industrious and sagacious beaver, for, by some two or three hours' work bestowed in removing a portion of the dam, the pond was easily drained, and after a few warm or windy days have elapsed frequently many hundred acres, latent with an inexhaustible fertility, would be ready for the plough ; besides many other advantages, no unsightly stumps or rugged inequality marred the prospect, and the laborious process of clearing the land of heavy forest timber, which in former years once encumbered it, was already done to their hands. No wonder that these spots were eagerly sought after by the first colonists, prompting many a courageous settler to venture beyond the safe limits of the settlement. In those days, beaver fur was very valuable, so that the Indians drove a brisk trade in catch-

ing the beaver. The knowledge the natives had of such spots was therefore never revealed till these animals had all been caught, when they exacted their own terms for the information. The class of persons who generally bought such places, were the affluent and educated, whose station in life entitled them to respect, and who were capable of taking with them a number of hired hands, and to incur the expense of surrounding their dwellings and outhouses with a stockade. Thus fortified, their homes were secure against surprise, or the prowling treachery of some Indian enemy.

When maize corn is planted on these reclaimed lands, the yield is almost marvellous. The proprietor, as drawn in the picture, seems astonished, for he is holding up an ear in admiration, and the two hired men seem cheerily and busily at work in cutting up and stacking the stalks.

A Scene amidst the Alleghany Mountains; a cloudy Day.

These mountains extend along the whole Eastern coast of America, at various distances, from fifty to a hundred and fifty miles from the Atlantic Ocean. The same range of mountains may be said to extend across the Gulf of Mexico and the Caribbean Sea, the West India Islands being regarded as the tops. All west beyond this range and between the Rocky Mountains, near the Pacific, is regarded as the broad valley of the Mississippi.

Mr. Harvey, in his lectures in Great Britain, drew the attention of his auditors, on some occasions, to the advantages these mountains afford to such as had capital, and could live for a few years without an immediate return of the money invested. In the Southern parts some of the slopes are peculiarly adapted to vineyards. The wine made from the native grape, when properly manufactured, resembles the best Rhenish, such for instance as the Johannisburgh brands. In the North, when the forest which uniformly clothes them is removed, the soil yields a pasturage for sheep well calculated to their nature, and at the same time the herbage imparts a fine flavor to their meat. The portions lying in the valleys could be converted into meadows, which would afford grass for mowing, so that sufficient winter fodder could be secured when snow covered the ground. Many districts can be purchased for a mere nominal price.

An abandoned Clearing in West Canada.

This sketch was made during Mr. Harvey's last visit in Canada. The spot for the dwelling was well chosen for settlement, a spring of pure water bubbled up not far from the door, a little rill meandered

over a slightly undulating surface, the neighborhood seemed to be healthy, and the tall growth of deciduous timber indicated an inexhaustible fertility of soil. It was also situated on one of the principal roads, called Dundass street; but no settlement was nearer than five miles, a dense wilderness everywhere surrounded it. There would be no difficulty in imagining a story to account for the desertion, but throughout these lectures a faithful observance of facts and things has ruled; fiction therefore would be out of place, were such to be attempted in the present instance. The ground seems never to have been broken up, though for the most part it was cleared of its forest timber. The roots of two trees, sticking up at least ten feet perpendicularly, show where the wind has done its work. Such spots are difficult to reduce into a trim appearance. The hollow tree near the woodman resting, has been charred by fire, which burned as it would in a chimney, and consumed the upper part. The long stump, some ten or twelve feet high, puzzled the artist exceedingly to account for its height. How could it have been cut at so great an elevation from the ground? He ventured the question, and was quizzed by being told that the tree was cut in the winter when the snow was that deep. The solution of the mystery, however, is simply this. When the forest tree is deprived of the shelter of its neighbors, they are very apt to be blown down by the first high wind, and then, if the top boughs should be cut off, thus freed, the elasticity of the roots will frequently nearly restore them to their pristine position. Such was the case in this instance. The bushes which have overrun the ground after it was neglected, are the red Antwerp raspberry. The spontaneous growth of these bushes on such neglect occurring, is a very remarkable fact, and is somewhat similar to the one mentioned in regard to the oak taking the place of the pine; it is, however, less perplexing to the philosopher to account for, since it is well known that birds are very fond of the raspberry, and as the seeds are not easily digested, the clearing, in the course of one or two years, may be soon strewed over. In some of these abandoned settlements, bushels and bushels of the largest and most deliciously flavored berry could be gathered.

Fishing by torch light on Lake Ontario.

The scene before us belongs to one of those reminiscences to which the artist never recurs without a thrill of pleasure, verifying the aphorism of the poet, that

"A thing of beauty is a joy forever."

The picture represents a calm moonlight night, at the season when

all nature clothes herself in a robe of loveliness, for summer was at hand. The air was delightfully balmy, and the first note of the whip-poor-will was heard rushing through the serene atmosphere, proclaiming that warm weather, for the next few months, was indeed to rule.

The canoes which lined the woody shores of Lake Ontario near Burlington Bay, on the present occasion, numbered at least a hundred, all with blazing fires placed high on their prows, flickering their rippling light, in many a lengthened column, on the surface of the quiet lake. It seemed as though every settler, residing near the shores, had, with one consent, joined in a festival of sport to spear the migratory salmon. Man and wife strove emulously together in the task, the former, with gaze intent, looking into the watery deep for his prey, and the latter, in paddling a devious course wherever glistening scales revealed a fish. The scene was truly gay and animated, and, from its novelty, seemed like those marvels of enchantment recorded in Eastern fables.

Drawing out Stumps.

This is a sure indication that the farmer takes some pride in the appearance of his land, and wishes to see his fields with a smooth and tidy surface. In many districts, laboring men obtain their living by having one of these stump extractors—such as is represented in the view before us. They, for the most part, contract to remove these relics of the forest, at so much per stump. The price varies from ten to twenty cents each, depending on the facility of removal. If the roots are thoroughly decayed, the lesser sum will compensate, but if the clearing is so recent as not to have permitted this rotting to occur, the larger sum is not too much. The process is to move the machine over the stump to be extracted, when one end of a large ox chain is thrust under a root, and then hooked to the link of the other part hanging loose. Thus secured, the oxen are started, and they being fastened to the rope passing round the large wheel, an immense power is obtained, and so the stump is drawn out. These stumps are afterwards made to serve the purpose of a fence, as seen beyond the oxen.

The pretty little village in the distance, nestled amidst hills, and the church, with its pointed spire, are indications of habits where comfort and serious thought characterize its people. The scene lies in Vermont.

An Escarpment of Rocks near Harper's Ferry, Va.

Mr. Jefferson was so delighted with the mountainous scenery near Harper's Ferry, as to pronounce the pleasure its contemplation afforded, as worthy a voyage across the Atlantic. There are few localities

where the picturesque is so abundant within a limited range, as that part near where the Shenandoah and Potomac unite. The present view is a wood station on the banks of the latter river. Owing to the abrupt declivities and precipitous rocks skirting the stream, few opportunities present themselves for making a road down the mountain's side, and the geological formation, presenting many places where the rocks are ruptured in a perpendicular direction, permits the owners of the woodland on the summit to throw down their timber when cut into "cord wood." One of these "wood chutes," as they are called, is seen in the present view.

The principal market for this firewood is at Washington.

The Remains of Table Rock, with a portion of the Horse Shoe Fall, Niagara.

To illustrate American scenery, without including the marvel of the continent—the mighty cataract of Niagara—would be like omitting the character of Hamlet from the play of that name. But no mimic scene can adequately convey just ideas of its grandeur and sublimity. Even in nature the scene fails to realize the sentiments of vastness, which the imagination delights to conjure up from the published description various travellers have delighted the world with. In the language of Byron, it may be said that,

> "Its grandeur overwhelms thee not,
> And why? It is not lessened; but thy mind,
> Expanded by the genius of the spot,
> Has grown colossal."

The present view was selected, owing to a remark which a leading statesman of the British Cabinet was pleased to make—when Mr. Harvey was showing the contents of his port folio—that the sketch from which this view was taken, "was the only representation he had seen, conveying any just idea of its sublimity." The Indian standing in an attitude of rapt admiration, in bold relief, on the pinnacle of a fallen mass of rock, serves as an object whereby we grade or measure the vastness of the scene, and as only a portion of the Fall is taken in, the mind is left free to imagine the great extent unrepresented.

A New York Packet Ship amidst Icebergs on the Banks of Newfoundland, in the Spring of the Year.

The present view was taken by Mr. Harvey, when he made a return voyage in the splendid packet ship Victoria. For several days we were in the midst of these vast frozen islands of ice, drifting out of Davis's Straits, and during the whole time the Captain would not per-

mit himself to take more than a few brief periods of rest. We were in a region of danger, but fortunately for us the weather was most propitious, for we had a clear atmosphere, a fresh breeze, and a full moon; but had fog or darkness surrounded us, the perils would have been imminent. The next view represents the icebergs in the place of their formation, in autumn.

A Whaling Vessel at anchor in the Polar Regions.

The present view is the only one for which Mr. Harvey stands indebted to other eyes than his own. It is from an oil painting by a French artist of the name of Gebe.

The scene represents the icebergs in autumn, after the warmth of summer has melted the frozen masses into many grotesque forms. The preceding picture showed great rounded promontories, sloping hills and precipitous cliffs. The trickling thaw has melted the solid water which has run wherever a slope permitted its descent. Water, as it is a better conductor of heat than the surrounding air, has melted the ice more rapidly than the other parts not so acted on. These little rivulets, therefore, have fashioned the bergs into pinnacles and pointed craigs, and in some places, where they have fallen over and lodged against others, they have formed arches, galleries and caverns.

The rocky cliffs against which the icebergs were once frozen fast, are now naked and bare. In some regions cliffs are more than a thousand feet high, and a mountain slope, in many instances, continues its soaring range till lost in the region of perpetual ice. Against the sides of these cliffs, such waters as the revolving sun sets free, are frozen fast on the northern side. The accumulation goes on, year after year, till the mass becomes so ponderous as to break from its fastness, and, if the water at the base of the cliff is sufficiently deep, it floats with the polar current described in the opening of the exhibition, and is carried southward, where, mingling with the warm waters of the Gulf Stream, they soon melt away.

A dioramic effect has been gradually taking place, showing in the thickening gloom of evening, the gradual uprising of the auroral arch, and soon you will witness the corruscations of streamers—merry dancers, they are called,—flashing continuously beneath.