CHAPTER 10
BEYOND NATURE

On July 24, 1804, Thomas Moore, a young Romantic poet wrote to his mother in England about his almost mystical experience at Niagara Falls.

I felt as if approaching the very residence of the Deity; the tears started into my eyes....Here all its awful sublimities rushed full upon me. My whole heart and soul ascended toward the divinity in a swell of devout admiration, which I never before experienced. Oh! Bring the atheist here, and he cannot return an atheist....We must have new combinations of language to describe the Falls of Niagara.


More recently, Superman's girlfriend, Lois Lane, experienced a different set of emotions at Niagara Falls.

Clark Kent: Here you are standing in front of one of nature's most awesome spectacles and you're thinking about food. Aren't you impressed?

Lois Lane: Once a girl's seen Superman in action, Niagara Falls leaves you kind of cold.

quoted from the movie, Superman II.

After 1850, the dizzying pace of technological advance accelerated. Every aspect of life was affected by the new technology. The Industrial Revolution's promise of a better material life was beginning to be realized. The puny limitations of human and animal strength were grossly superseded by enormous engines and machines. The electricity that powered many of these machines overwhelmed the darkness of night and illuminated entire cities. The telephone began to transmit soft voices across the ocean. The railroad and steamship evolved into complex networks of huge and powerful vehicles that hurtled rapidly through space and linked the world more closely.

The train was perhaps the century's foremost symbol of progress and signpost of man's domination over nature. Even self-willed outcasts from society, such as Henry David Thoreau, who were wary of the ultimate impact of industrialism, were intoxicated by the train's power and regularity. In Walden, safely removed from civilization's hustle and bustle, but still touched daily by the railroad, Thoreau diagnosed the symbol with uncanny intuition.

The Fitchburg Railroad touches the pond about a hundred rods south of where I dwell. I usually go to the village along its causeway, and am, as it were, related to society by this link....

The whistle of the locomotive penetrates my woods summer and winter...When I meet the engine with its train of cars moving off with planetary motion, - or, rather, like a comet... - with its steam cloud like a banner streaming behind in golden and silver wreaths, like many a downy cloud which I have seen,...when I hear the iron horse make the hills echo with his snort like thunder, shaking the earth with his feet, and breathing fire and smoke from his nostrils,...it seems as if the earth had got a new race now worthy to inhabit it...
I watch the passage of the morning cars
with the same feeling that I do the rising
of the sun, which is hardly more
regular....

The startings and arrivals of the cars are
now the epochs in the village day. They
go and come with such regularity and
precision, and their whistle can be heard
so far, that the farmers set their clocks by
them, and thus one well conducted
institution regulates a whole country.
Have not men improved somewhat in
punctuality since the railroad was
invented? Do they not talk and think
faster in the depot than they did in the
stage-office? There is something
electrifying in the atmosphere of the
former place....We have constructed a
fate, an Atropos that never turns aside.

(1854)

People felt they had created a fate, and that
they could finally vie with the gods. By the late
nineteenth century, people scornfully cast
nature down from her throne and crowned
themselves. It is little wonder Niagara Falls
failed to impress Lois Lane.

But the mantle of divinity is never worn
easily. The nineteenth century proved to be an
extremely unsettling time. Fewer people were
needed to raise the food for the world's growing
population. Mechanization rendered obsolete
many of the timeworn talents of local artisans.
The excessed and unemployed populations
emigrated to the overcrowded cities or to new
lands like America, where they often became
aimless automatons in the factories. As late as
the 1860's a John Henry might compete with
the machine and win but even then the cost
would be his life. A few years later, even if
Monet did convince the station manager to hold
up the trains at the Saint-Lazare Station for a
few minutes, no one would dream of
challenging a machine.

The changes produced by technology
provided material comforts but came at the
expense of the soul. The revelations of religion
retreated before the discoveries of science and
the might of machinery. With religion fading
from the scene, where was one to go for
spiritual comfort or guidance? A plethora of
divisive ideologies that catered to society's
uprooted and deeply disturbed souls
proliferated almost spontaneously.

These problems came to be reflected in all
aspects of the arts as the nineteenth century
wore on. For a few brief years, optimism
reigned and many served proudly as self-
appointed apostles of the new god of
technology. Some did it with brash fanfare.
Friedrich Nietzsche loudly proclaimed that God
was dead and would be soon replaced by a new
breed of Supermen. The message permeated
the fabric of the arts. Even the apparently naive
Impressionist landscapes constitute eloquent
and effective proclamations of the supernatural
accomplishments of the Technological and
Industrial Revolutions.

But this passionate love affair of the arts
and sciences was quite fragile and soon came
unwoven, its attempted synthesis shredded into
a society of multiple cultures. Even though
artists felt compelled more than ever to use the
language of scientists, never had the gulf
between the two been greater. While scientists
and inventors claimed the ever expanding
domain of the rational and visible universe, the
displaced artists were obliged to retreat step by
step toward the invisible world of the
irrational. Abstraction, distortion and
dissonance then diffused throughout the fibre
of the arts. These tendencies were exacerbated
by a fundamental change in the type of people
drawn to the arts. The loss of the old sources of
patronage and their replacement by the Salon's
rigid control over artistic tastes and sales
meant that aspiring creative artists would be
drawn from the pool of people willing to forgo
public acclaim or material advantage - society's malcontents.

As the century wound to its close in an increasingly mechanized and unforgiving universe, the outcast artists got their revenge. They deposed Nature and forced it to play a servant's role to their psyches. The painters' Nature became a mere roadmap to point the way to the 'beyond'. Humans were portrayed as weird and distorted misfits in an uncharted, hostile world. The feeling of many late nineteenth and early twentieth century artists on such matters was expressed quite succinctly by Albert Ryder, the visionary landscapist, when he said, "I am trying to find something out there beyond the place on which I have a footing." One look at works such as Ryder's Toilers of the Sea, or Edvard Munch's Scream and there can be little doubt about what was meant. Who would ever have foreseen the hydra that evolved from the romance between Science and the Sublime!

Impressionism: Light in the Powder Puff Skies of Progress

By 1860, Western Europe was a fully settled continent with no vanishing frontier to lure her painters. Thus, while many Americans wandered ever further afield in search of untamed vistas, European painters were forced to scrutinize the familiar skies above their own backyards for fresh material. But in doing so, they discovered new worlds of light.

James McNeill Whistler was expelled from the United States Military Academy after failing chemistry. He would later become one of art's premier atmospheric chemists. In 1855 he arrived in Paris to study art and was taken by Courbet's realism. But this influence gradually faded after 1859 when Whistler moved to London, where he had spent some time as a child and where he was to develop his unique style.

Whistler often went down to the Thames River to sketch. On Christmas day, 1860 he chanced upon a setting that excited him and that proved to be the precursor of his later tonal and abstract landscapes. Ice floating on the river offered areas of white that offset the brown tone of the Thames' polluted water and the leaden grays of London's misty and interminably overcast sky. The result was The Thames in Ice (Fig. 10-1), which Whistler completed in three days. The sky is covered with a featureless deck of stratus, below which there is a small area of darker fractostratus. The visibility is reduced to barely one mile but is just high enough to reveal a number of smokestacks across the river. Only two of these chimneys are active - after all, even the hell fires of industry relax on Christmas day!

Fig. 10-1. James McNeill Whistler. The Thames in Ice. 1860. Freer Gallery of Art.

Whistler later spoke of the poetic allure evoked by the obscuration of London's atmosphere,
When the evening mist clothes the riverside with poetry, as with a veil, and the poor buildings lose themselves in the dim sky, and the tall chimneys become campanili, and the warehouses are palaces in the night, and the whole city hangs in the heavens, and the fairy-land is before us...Nature...sings her exquisite song to the artist alone.

_Ten O’Clock Lecture_. 1885.

_The Thames in Ice_ served as a precursor not only for Whistler’s own more abstract later works but for many Impressionist ideas as well. To begin with it reveals the dirt, dullness and obscuration of an industrially befouled atmosphere. The Impressionists were far more circumspect about showing industrial filth, but would still devote many canvases to the effects of mist and air pollution. Like Whistler, the Impressionists stressed tone and lighting while deemphasizing form and volume. Finally, although Whistler and the Impressionists continued to use nature as their starting point, they became progressively more concerned with the problems of visual perception and more poetic in their approach to nature.

The ascendancy of light over form was in the air. In 1866, August Schaefer, better known for a series of geographical landscapes that still grace the halls of Vienna’s Naturhistorisches Museum, painted a cumulonimbus topped by cirrus towering above the trees in _Sunset in Hungarian Forest_ (1866, Corcoran Gallery of Art). The painting scarcely hints at the cloud’s majesty or power, choosing instead to bask in the play of sunlight on its face.

The entire cloud is bathed in direct sunlight yet its color grades from white at the top to pink at the base. This color gradation is a sunset phenomenon and not an inherent property of clouds. Clouds merely reflect whatever light falls on them. When the sun nears the horizon its rays must pass obliquely through such a great thickness of atmosphere that virtually all the shorter rays are scattered and only the longer, red waves can penetrate the atmosphere in appreciable quantities. But the tops of the tallest clouds extend into air so thin that little sunlight is scattered, and they remain white even after the sun sets at the earth’s surface (Fig. 10-2).

Fig. 10-2 Color gradation of thunderstorms over New York City at twilight on 15 August 1988.
Striking color differences often occur when sunlit clouds occupy several distinct layers around sunrise and sunset, and a number of artists had recorded that observation earlier. At such times, lower clouds such as cumulus appear pink or red while the higher clouds above them, such as cirrus, are white. But before *Light in Hungarian Forest*, only Frederic Church had hinted that a single cloud could display a color gradation (*New England Scenery*, 1851, George Walker Vincent Smith Art Museum, Springfield, MA).

Two themes that concerned Schaefer preoccupied the Impressionists. They greatly expanded on the message that clouds merely reflect or transmit the light that strikes them by emphasizing how everything we see is tinted by the light that falls on it. Their landscapes are also geographical documents. Legions of art historians have retraced the Impressionists' footsteps to pinpoint the settings of their landscapes and in so doing have helped reveal the careful thought that underlies the disarmingly naive Impressionist vision. The Impressionists' poetic landscapes may well flood the senses with the light and color of sweet, intoxicating worlds of charm and seeming innocence and this will always be their most alluring feature, but their vision was carefully cultivated.

All painters are propagandists. And, despite the Impressionists' almost legendary scorn for bourgeois tastes, their paintings constitute some of the most eloquent defenses of major bourgeois accomplishments - the industrialization of the world and taming of the elements by technology.

This cause celebre echoes silently through the Impressionist skies. Their skies may be overcast, and may show rain, wind and snow, but there are few signs that nature contains any element of danger. Gone are unchained nature's dark swirling storms and sublime 'effects'. Human progress has conquered all.

When synthetic clouds began to fill the skies and obscure nature's clouds, the Impressionists duly included them, but often in a transformed manner. We know such clouds as the toxic plumes that pollute the entire environment, bringing discomfort and acid rain to all, but the Impressionists portrayed them differently. Many of their urban landscapes are so scrupulously sanitized they offer no hint of how dirty real conditions sometimes were. Their charming and endearing qualities not only account for their great popularity, but also have done more for Europe's image than all the European tourist bureaus combined.

Oscar Claude Monet, Impressionist par excellence, did not begin life as an Impressionist, and did not at first even give a thought to landscape art. He grew up in Ingouville, a fashionable hillside district of Le Havre that offered panoramic views and all the lures of the nearby water. Even so, he began his career as a financial success at the age of sixteen, drawing caricatures of prominent local citizens. It took some time for Eugene Boudin to convert Monet to the dual causes of poverty and landscape painting.

Boudin was Le Havre's itinerant landscape painter, who set out at dawn and returned after sunset to absorb nature's lessons. Boudin seldom ventured far from France's north coast and his skies show it. He was a gentle man who let the majority overrule the exceptional examples of violent weather or strident, towering clouds. As a result, his meteorology is quite restricted in scope, but within his milieu he was unsurpassed. What Boudin teaches is the moisture of the sea and the moderate action of the northern sun. The lowest few thousand feet of his atmosphere is almost always humid and typically occupied by a layer of stratus or its disintegrating remnants. Dry air resides above, so that when the sun does manage to burn openings in the humid layer it reveals openings of clear blue sky, perhaps with hints of higher clouds. But the sun is almost never strong enough to finish off the job, and leaves behind a field of vertically suppressed, smooth edged, and
slowly evaporating stratocumulus, as in the *Coast of Brittany* (Fig. 10-3). Even when Boudin traveled to Venice he could not relinquish his gentle, northern skies, and only near the end of his life did he acknowledge a hint of storminess.

Boudin’s gentle landscapes were displayed in a storefront alongside Monet’s caricatures. Boudin recognized Monet’s talent and insisted he join him to paint outdoors. After refusing several invitations, Monet finally did follow Boudin to the countryside where his eyes were opened and he learned perhaps the most important lesson of his professional life.

Everything that is painted on the spot has always a strength, a power, a vividness of touch that one doesn't find again in the studio.


Ten years later, in 1867, Monet was milking the sky around Le Havre for all it was worth. At this early point in his career, before he learned he was an Impressionist and before he decided to divide his skying time between innocuous puffs of fair weather cumulus, dulled layers of stratus or altostratus, or endless nuances of mist and fog, Monet recorded a wide range of meteorological conditions. He painted clear and placid skies, quietly brooding altostratus, dark nimbostratus or winter storms, unlimited visibility under broken layers of

![Fig. 10-3. Eugène Boudin Coast of Brittany, 1870  Collection of Mr. and Mrs. Paul Mellon 1983.1.11](image-url)
windswept stratocumulus from departing storms, towering cumulus on days with gusty showers, ominously silent leaden skies with sacrificial scud sucked into approaching thunderstorms, and even a rainbow grafted improperly onto a sunless winter sky.

Monet used Sainte-Adresse’s beach as the setting for two of his most insightful meteorological creations the Regata at Sainte-Adresse (Fig. 10-4) and the Beach at Sainte-Adresse (Fig. 10-6). Both were executed in June 1867 and were probably started on the same day. Both present almost identical views of the beach. Both face SE and include the same section of Le Havre in the background (Fig. 10-8). Possibly later on the same day, Monet painted a third scene a bit further down the beach (Private Collection). From the small reproduction I have seen it appears that the sky is overcast and rain has begun.

This meteorological mini series represents a precursor of Monet's later series of identical scenes such as the Haystacks or the Rouen Cathedral shown under a variety of lighting conditions. The sky of the Regata contains two cloud genera (as in Fig. 10-5) and enough meteorological information to make a weather forecast. The shadows show that sun is located...
behind and to the right of the viewer, which places it slightly south of west and makes the
time about 4:00 PM. The thin, broken cloud layer overhead is the leading edge of a
cirrostratus deck moving in from the west. Small cumulus clouds have formed over the
sunlit land to the southeast in a lower layer of the sky near the horizon. The cumulus are
confined to a thin layer and, because it is so late in the day, will not grow any taller.

The weather outlook for the Regata is not bright. Cirrostratus covering the western sky is
one classic sign of an approaching low pressure area. Over the next few hours the
cirrostratus deck should invade the entire sky and then lower and thicken. Rain should begin
before dawn. This outlook is confirmed by the Beach, which probably shows the sky a few
hours later. The cirrostratus have thickened to an opaque deck of altostratus while some
darker stratocumulus, possibly from the earlier cumulus, have spread beneath to give the sky a
mottled appearance (as in Fig. 10-7). Here I hypothesize that Monet began sketching the
Regata under bright skies, without anticipating a second work. But then the sky changed
before his eyes, altering the appearance of all the landscape features profoundly, and
compelling the alert artist to undertake a second, and even third version of the scene.

Although a strip of clear sky appears to separate the two cloud types, the much higher
cirrostratus actually overlies the nearest cumulus. The opaque cumulus are illuminated
by reflected sunlight and appear brighter than the translucent cirrostratus, which is
illuminated by transmitted sunlight.

The Regata and the Beach served the Impressionists as primers for how clouds affect
the lighting and color of the entire landscape. Under the bright sky of the Regata, the water
sparkled and the buildings gleamed in the sunlight. Under the yellow-gray altostratus in
the Beach, the radiance has been extinguished. The water has turned gray and opaque, the
buildings, glum, and the earth subdued. Even the white canvas sails appear black.

Fig. 10-9. Claude Monet. Sunday at Argenteuil, 1872, Louvre.

Fig. 10-10. Lighting differences on two cloud layers
Sunlit fringes of cumulus are brightest, shaded bases
of cumulus, darkest and altocumulus, intermediate.
Monet apparently found the subtle lighting contrasts between different cloud layers visually pleasing and took several other opportunities as in *Sunday at Argenteuil*, 1872 (Fig. 10-9) to show several cloud genera (e.g., cumulus and altocumulus in a painting. These were always done in a convincing manner, as Fig. 10-10 indicates.

But whenever the Impressionists painted stratiform clouds, which they did quite often, they dulled the tone of the landscape. Monet's *Pont Neuf* (Fig. 10-11) approached a state of complete tonal degradation. Hints of fractostratus provide the only relief in a yellow sky covered by an otherwise featureless, unbroken deck of nimbostratus. The wet ground complements this mood by assuming the yellow tone of the clouds and allowing diffuse reflections of the umbrella toting pedestrians. A fine mist or drizzle has reduced visibility while the plume from the smokestack of the boat on the Seine is greatly enlarged in the saturated air.

One of Alfred Sisley's most sparkling scenes and one of the most perfect specimens of Impressionist powder puff cumulus appears in his Bridge at Moret (Fig. 10-12). Sisley first discovered the picturesque and affordable town of Moret-sur-Loing in 1880, and later settled there. Forty miles upriver of Paris, at the juncture of the Seine and Loing Rivers, Moret's waters are sparkling clean, its air, fresh and pure, and its sky, deep blue. There is neither a trace of industry nor a hint of pollution.

It was only under the cloak of altostratus or stratus that the Impressionists allowed a view of the increasing urban pollution. Once the sun broke through, it cleansed the earth and sky. When cumulus governed Impressionist skies, the landscape sparkled.

It is mid morning, prime time for pristine skies and baby cumulus. The lighting on the buildings and the shadow of the horse and cart on the bridge place the sun to the left or SE, since the scene faces WSW. The sky is typical of a bright spring or summer morning in northern France. There are wavy streaks of higher clouds at the top center but these only make the sky seem bluer by contrast. The widely spaced baby cumulus resemble floating powder puffs, and are far too small and immature to have flat bases. Later in the day, as cumulus rise to greater heights their flat bases congeal. They also spread to cover a greater fraction of the sky. The difference between Jacob van Ruisdeal's crowded skies of...
towering cumulus (Fig. 7-13) and the almost vacant Impressionist skies of baby cumulus is meteorologically valid. But mature cumulus often fill the afternoon air with a humid haze that saps the sky of its virginal blue.

The Impressionists rarely allowed their cumulus to mature. They liked the pristine sparkle and tame quality of morning skies so much they practiced the ancient art of bonsai on their cumulus. This fits with the story in which Monet hired workmen to restore an oak tree to its immature state by stripping its leaves after a week of spring rains had halted his work but not the tree's. Examples of this screening can be summoned at will. Even when Sisley showed the Seine above flood stage, he made sure to include one scene of the *Flood at Le Port-Marly* (1876, Louvre, Paris), in which the ever so slightly ruffled and unmuddied waters glisten, and small puffs of cumulus, with a hint of altocumulus above, glisten in the unpolluted sky.

The real Seine and sky were not so clean. The Seine was the sewer of Paris. After two separate outbreaks of cholera (one in 1831, and the second in 1848-49) claimed the lives of 19,000 Parisians apiece, the sewers became a top priority item in the redesign of the expanding city.

Baron Georges Eugene Haussmann served as chief architect for the new Paris and he performed his job in exemplary fashion. The sewers were his engineering masterpiece. Every consideration was given to getting the waste waters far from the city with a minimum of inconvenience and backup. The sewers flowed into three major collectors which then were routed northward. After bypassing one large loop of the meandering Seine, two major man-made tributaries discharged their unwelcome fare a few miles downriver at Asnieres and at Saint Denis. There, even though human ordure had been legally banned from the sewers, the Seine became abruptly offensive. The waters were darkened by streaks of an unhealthy and fetid brew that none of the senses could fail to register. The city of Paris was obliged to periodically remove the most prominent deltas of sludge that amassed just below the outflow points, but this was small compensation for the wholesale degradation of the riparian environment.

At Argenteuil, a fashionable tourist Mecca 17 miles downstream from Paris, the Seine grew so intolerable that the town mayor included the following description in a plea for relief,

> Between the highway bridge and the floating laundry houses which are along the promenade, sludge has built up all along the banks. Above these boats, the earth has been consolidated; even a garden was created and this garden completely stops up the part of the river between the bank and these boats;...the water for a rather long distance no longer moves; there is an accumulation of filth, dogs, and cats in putrefaction; the traffic on the promenades becomes unpleasant.


Guy de Maupassant phrased the same basic sentiment a bit more poetically when he wrote in his reminiscences,

> For ten years my great, my only absorbing passion was the Seine, that lovely, calm, varied, stinking river, full of mirages and filth.
How did Monet picture this river of mirages and filth? So long as the sun shone upon it and cumulus reigned above, Monet's Seine was a mirage of purity. Monet must have loved this river, for he spent most of his life along its banks. But in 1878, urged by Argenteuil's expanding industry and growing aroma and driven by poverty, he moved with the Hochschede family further downstream to Vetheuil. Times were hard and the group knew hunger. Camille Monet died at the end of the summer of 1879. Claude was devastated and painted very little until the river brought him back to life early in 1880.

During the severe and snowy winter of 1879-80 the Seine froze solid. When a thaw finally came in January, Monet was there to record it in the Ice-floes (Fig. 10-13). The atmospheric envelope that Monet spoke so often of and that conditions everything we see, appears here in nascent form to reduce visibility and embrace the universe. Hints of cirrus can still be seen through the pale, misty blue sky - Monet had not yet shut out the world entirely. But quiet reigns and no breath of wind has been allowed to disturb the mirror surface of the water.

Only the ice-floes break the images of the vegetation. The ice-floes and snow on the river bank are not white but assume pastel colors. Consider the possibilities of ice and snow. We grow up with the expression, "as white as snow" imprinted in our mind's eye, and Renoir once called snow the "leprosy of nature". Still, it was the Impressionists who first revealed snow as a coat of many colors and continued to do so almost every winter from 1869 on. Any city dweller knows that within a day, snow begins to acquire a dirty film. But even when it is still pure, snow is not always white. Dig a hole in the "pure white" snow and you will find it to be deep blue. Watch carefully and you will notice that sunlit snow assumes the golden or rosy tints of the low winter sun, while the shaded areas are tinged blue by the light of the sky. Monet's various Haystacks (1891),
amount to a compendium of the possible colors of snow.

Camille Pissarro's *Rabbit Warren at Pontoise, Snow* (Fig. 10-14) explores some of the possibilities of snow brought out by the severe winter of 1879-80. Pissarro lived and painted for many years in the village of Pontoise, at the junction of the Seine and Oise Rivers, some 30 miles downriver from Paris. In the *Rabbit Warren*, snow covers the ground and houses, and even coats the vegetation. Pissarro has extracted every square inch of lively coloring the drab scene could possibly have possessed. The tiny brick chimney tops show up as bright orange and, despite the cold, there are still a few vestiges of hearty green vegetation. Even the snow partakes in the parade of colors, for in the lower right foreground yellow highlights have emerged from the midst of the gray as if by magic.

Fig. 10-14. Camille Pissarro. Rabbit Warren at Pontoise, Snow. 1879. The Art Institute of Chicago, Gift of Marshall Field.

The yellow tint of the snow in the Rabbit Warren is reflected in the sky above. This yellowing constitutes the highlight of the otherwise uniform deck of gray stratus and is certainly a byproduct of the pollution. Not surprisingly, the visibility is rather poor and the exposed surfaces of houses and trees beyond the immediate foreground appear dark gray and featureless. Here, without a single
smokestack to disturb the quiet rural setting, Pissarro has painted a singularly incriminating piece of evidence about technology's unwanted but all too pervasive impact on the environment.

Smokestacks and their effluents abounded in Impressionist canvases. In 1907, Paul Signac presented a candified panorama of the Port of Rotterdam (Fig. 10-15). The entire scene can be decomposed into a vast number of light blue, white, pink and purple dots done in the pointillist style first developed by Georges Seurat. Air pollution from the plumes has so reduced the contrasts of light and color that water below and sky above look the same. If you cover the few features crowded around the horizon line, the rest of the work degenerates into an undifferentiable collage of dots. This is true of many Impressionist works done under overcast skies.

Fig. 10-15. Paul Signac. The Port of Rotterdam. 1907. Museum Boymans-van Beuningen, Rotterdam.

Within a few miles from their source, all the distinct smoke plumes merged into an anonymous and almost uniform pall that cast a subtle film over the face of all things and created a new, softened atmospheric luminosity. This provided the Impressionists with new worlds of visual material. Their pastelled palettes and Monet's famous envelope were byproducts of the industrial environment. Gone were the sharp contrasts and substantial clouds of olden times, and in their place came much softer hues and delicate cotton puffs.

These changes did not go by unnoticed. In The Storm Cloud of the Nineteenth Century (1884), John Ruskin was probably the first to bemoan the decreased attention paid to cloud form as a result of all the pollution. Half a century later, Lewis Mumford, one of the founders of regional planning, redrew attention to the effect of industrial pollution on artists in, Technics and Civilization.

But paleotechnic industry was not without an ideal aspect. The very bleakness of the new environment provoked esthetic compensations. The eye, deprived of sunlight and color, discovered a new world in twilight fog, smoke, tonal distinctions. The haze of the factory town exercised its own visual magic: the ugly bodies of human beings, the sordid factories and rubbish heaps, disappeared in the fog, and instead of the harsh realities one encountered under the sun, there was a veil of tender lavenders, grays, pearly yellows, wistful blues.

Turner was perhaps the first painter to absorb and directly express the characteristic effects of the new industrialism... [which also] gave birth to its chief collective triumph, the work of the Barbizon school and the later Impressionists, Monet, Sisley, Pissarro, and most characteristic if not most original of all, Vincent Van Gogh.


What more can be said about the powder-puff skies of the Impressionists? The Impressionists chronicled certain atmospheric events with an accurate, poetic vision, and produced some sparkling jewels of light and color, but their surprising limitations cannot be ignored. The technique of using broad
brushstrokes took a heavy toll on the sky, for
that made it difficult to represent the fine
clouds such as cirrus or cirrocumulus. But the
most important restriction resulted from the
domestication of nature. All storm and stress
were purged, and along with them went the
atmosphere's wondrous phenomena such as
rainbows and halos. Only the practiced naivete
of forcibly becalmed skies remained to the
Impressionists and then there was no wind left
to sweep away the blurring envelope of
pollution excreted by their beloved god of
progress. In the end, Impressionism
asphyxiated itself.

Nature's Roadmap to the Beyond

When the Impressionists opened the
floodgates of light and color, they had tapped
an ancient wellspring.

In 1666, when Isaac Newton tried his hand
at the celebrated phenomenon of the colors, it
was already an ancient experiment. But Newton
realized the importance of one feature that had
eluded all his predecessors. For two thousand
years, people had known that when a narrow
beam of white light passes through a glass
prism, the entire spectrum of colors emerges
from the other end. Newton noticed that the
emerging spectral beam was elongated and
wondered why. He conjectured that the
elongated beam was actually split in its passage
between the air and the prism. He then took the
step of genius by successfully reuniting the
different colors of the beam with a second
prism. What emerged from the second prism
was white light. From this, Newton deduced
that each color of the spectrum is simply a
component of white light.

More than a century passed before Thomas
Young made the first significant advances on
Newton's concepts of light and color in 1802.
Young (who demonstrated the wave nature of
light) was trained as a physician, and realized
that physiologically, we need to combine only
three primary colors of light - red, green and
blue-violet - to see white light. Another sixty
years passed before James Clerk Maxwell
popularized the concept in a public lecture.

Maxwell designed a compelling
demonstration to show that light consists of
three primary colors. He took three black and
white photographs of the same scene, each
through a filter of a different primary color.
Each of the photographs was then developed as
a black and white transparency and covered
once again with the original colored filter. The
three transparancies were then simultaneously
projected on a screen. When the images
coincided, a full colored reproduction of the
original scene resulted.

Maxwell's demonstration greatly
simplified the chemists' search for a solution of
the problem of color photography even though
his process proved impractical. Painters, on the
other hand, were only confused by these
findings, for when they mixed different
pigments the mixtures only got darker. In
1867, the distinction between light and
pigment was stated clearly for the first time by
Hermann von Helmholtz. When different
colors of light are combined, the effect is
additive and the light gets brighter and whiter.
When different pigments or dyes are
combined, the effect is subtractive and
becomes darker because the mixture absorbs
more light. Color photography today is based
almost exclusively on the subtractive
properties of chemical dyes.

Helmholtz's clear distinction between light
and pigment reached the artistic community
within a decade and bestowed an aura of
theoretical justification on artists who used a
palette of the spectral colors and who filled the
canvas with broad brushstrokes of unmixed
paint. When the paintings are viewed from a
sufficient distance, the colored strokes appear
to merge in the eye. The merger leads to a third
color, which although not as bright as the sum
of two colors of light, is brighter than
premixing the two pigments. Painters had
finally found the best possible means to
simulate the effects of light that paint would allow. The Impressionists were enraptured by this discovery, but others had gotten there first.

In 1824, Eugene Delacroix created a minor scandal by repainting his Scenes of the Massacre of Scio after it had been accepted for display in the Salon. Delacroix was inspired to do this the moment he saw Constable's Hay Wain, which struck him as a revelation. The Hay Wain was painted by using dabs of different color rather than blending the paints and grading color and tone continuously in the accepted French style of the day. Delacroix saw that Constable's approach added a certain vibrancy that was missing from French paintings. Delacroix continued to experiment with a variety of coloring techniques for the rest of his life. The Impressionists and post-Impressionists would acknowledge Delacroix's approach to coloring as crucial to their development.

It was also in 1824 that the chemist, Michel-Eugene Chevreul was appointed Director of Dyes at the Royal Tapestry Workshop of Les Gobelins in Paris. Assigned the problem of improving the color intensity of wool dyes, Chevreul discovered that the apparent intensity of a patch of color depended more on the color of its neighbor than on the inherent intensity of the color itself.

In the case where the eye sees at the same time two contiguous colours, they will appear as dissimilar as possible, both in their optical composition and in the height of their tone.


Chevreul stressed that the apparent color of an object is modified by the color of the light incident upon it. He also observed that shadows appear to have the complementary or opposite color of the nearby bright region. For this he used a color wheel (or chromaticity diagram, Fig. 10-16) to show that if, for example, a bright region were tinted orange by the setting sun then the shadow would appear blue. At times, Chevreul carried his advocacy of the physiological effects too far, for he was wrong to reject the idea that skylight tints shadows blue.

This colorization is not due to the colour of the sky, as many persons believe; for if instead of the bodies being struck by the orange light of the sun, they were struck by red, yellow, green, or violet light, the shadows would appear green, violet, red, or yellow.

quoted from Seurat and the Science of Painting, p 67. Homer.

![Fig. 10-16. Chromaticity diagram. Spectral colors of light occupy the perimeter, pastel colors inside. The central region is white because it includes all colors of light. Complementary colors appear on opposite sides of the white point in this distended color wheel.](image)

Writing as a scientist, Chevreul urged artists to use his laws in a way that would remain faithful to nature. Nevertheless, the upshot of Chevreul's findings was to redirect
artists' attention away from the form of objects and to stress instead the primacy of the perceptions. Chevreul's carefully formulated set of rules only helped art grow more subjective and was one of the vehicles by which the floodgates of irrationality in sky painting were opened. Georges Seurat was the leading practitioner of this calculus of color. He formalized the color techniques of his predecessors and codified in paint the color theories of the scientists. His dots were presumably elemental colors that our eyes would integrate at a suitable distance into a coherent view of reality. Seurat's color scheme was carefully constructed according to Chevreul's and Ogden Rood's formulas. His compositions always included bright regions with adjacent shadows of complementary colors. Since we tend to see an aura of complementary color around an object, Seurat's approach redoubled the physiological effect.

Felix Feneon, Seurat's bulldog, vigorously defended this approach to art. He growled, "The painter's artifice will have rigorously restored the process of reality." But there are times when nature seems to be at odds with the way we see things, and then Seurat felt compelled to make nature give way a bit. In doing so, he was always careful to provide some theoretical explanation based on scientific principles. After Seurat, artists continued this trend toward rationalization but felt progressively less obligation to refer to nature. As a result, art technique was soon transformed into its own self-serving pseudoscience.

The call to science was only the gloss on the real influences that transformed sky painting after 1880. The uprooting changes that were transforming nineteenth century Europe allowed strange, irrational tendencies to creep across the horizon of humanity and diffuse into every walk of life. Even science made fundamental contributions to a picture of a universe so irrational as to be beyond the wildest imaginings of earlier day lunatics. Who, living in 1860, could possibly have anticipated the discoveries Max Planck of quantum mechanics and Albert Einstein of relativity? We now live in a world where bodies get shorter and heavier but age more slowly as they move faster. According to Heisenberg's Uncertainty Principle, it is statistically possible for balls to roll uphill and even the mere act of observation alters the scene we look at. And, as Sigmund Freud discovered, human actions and motives are far more irrational.

The philosophers, poets and artists could not clearly foresee these changes but somehow felt compelled to present a picture of the way the world was becoming as the twentieth century approached. They sensed that nature was no longer an end in itself but merely a roadmap to an ultimate reality that lay somewhere beyond the visible. It was during this brief transition period to the sterile myopia of pure abstraction that artists learned to distort nature in ways that would most effectively evoke the most visceral human responses.

The manipulation of nature to produce extraordinary psychological reactions was nothing new to art. Almost every period has had some exceptional figure whose distortions of nature haunt the psyche. Altdorfer, Grunewald and El Greco are just three of the more memorable earlier examples. At the beginning of the nineteenth century, William Blake created a fantastic art full of optical phenomena such as rainbows, which was specifically designed to counteract the rational Newtonian world he so detested. Blake was followed by Samuel Palmer, whose highly visionary and personal approach to sky painting prefigured Van Gogh. Other artists also presented personal and unusual visions but, until the later years of the nineteenth century, they invariably remained outside the mainstreams of art.

The year, 1880 can be taken to mark a turning point. Prior to that, Arnold Bocklin painted nothing memorable although he did have a flair for the sky. His *Spring* (1870,
Schackgalerie, Munich) contains an excellent rendition of stratocumulus. But in 1880, Bocklin created *The Isle of the Dead* (Metropolitan Museum of Art, New York), a haunting vision that announced in no uncertain terms the passing of an era. This brought the artist such financial success that he repeated the theme four more times. The third version is shown here (Fig. 10-17).

![Fig. 10-17. Arnold Bocklin. The Isle of the Dead. 1883. National Gallery, Berlin.](image)

The rocky island cemetery looms like a fortress to dominate the picture. Cypresses, symbols of mourning, stand erect and reach to the clouds. A rowboat is delivering a casket to the isle. The casket is attended by a solitary robed spirit that stands as erect and still as the cypresses.

*The Isle of the Dead* is an homage to motionless silence that would have impressed Piero della Francesca. Bocklin wrote that *The Isle of the Dead* "must produce such an effect of stillness that anyone would be frightened at hearing a knock on the door." But behind the silence of the foreground in the 1883 version, a turbulent sky of dawn or sunset compounds the mood. A curtain of clouds and mist reaches all the way to the sea surface and severs the isle from any tie to the world of the living.

The lurid lighting contrasts add to the mood of the painting. Somehow, the horizon sun breaks through to cast its rich, rosy light upon the island and the clouds above. This light does not reach the sea surface so the lower clouds behind the island are shrouded in a Stygian darkness. Higher up, there are a few breaks in the clouds but these deep blue twilight clearings are also sources of darkness.

In *The Isle of the Dead* it is apparent that something strange is going on. Nature has not been distorted or violated in this haunting vision of loneliness and isolation, yet somehow she has been made to serve some 'greater' purpose.

At the same time another strange spirit was beginning to conjur up lurid landscapes. Albert Pinkham Ryder was born in New Bedford, Massachusetts, the whaling town that served as home port in Moby Dick. Around 1870 Ryder moved to New York City and, aside for a few brief trips, remained there the rest of his life. In the 1870's he painted some pastoral landscapes with contented cattle, but like Melville's Ishmael, he could never wash the smell of salt water from his nostrils and was drawn back to the sea. Dates have not been established for most of Ryder's crucial works, but some time after 1880 he began to create his famous moonlit scenes that include the *Toilers of the Sea* (Fig. 10-18).

![Fig. 10-18. Toilers of the Sea. Albert Pinkham Ryder. Before 1884. Metropolitan Museum of Art.](image)

What is it that gives us such weird feelings when we look at the *Toilers of the Sea*? Age has added a veil of venerability to Ryder's
nocturnes because he used pigments that have cracked and assumed a more sombre greenish tone with time. But these are not the crucial ingredients that make his skies the archetype for the greatest horror movies. Somehow, the corona and the moonlit patches of altocumulus and sea foam unnaturally provoke night's normal darkness. These misplaced and almost unholy invasions of light in the rightful domain of darkness give the landscape its sinister aspect and place it somewhere in the 'Twilight Zone'.

Ryder painted his seascapes of the soul in a darkened and dusty Manhattan apartment during the long intervals between his few sea voyages. There, in the midst of the city's clamor, perhaps in the very year that the massive Brooklyn Bridge was completed, Ryder withdrew to a private world that acknowledged only the sea and sky.

At about the same time that Ryder was redefining his childhood phantom world, the power of the sea and sky also drew Winslow Homer, a fellow New Englander, back to the world of his youth. Many of Homer's early landscapes seem innocent enough, but around 1880, Homer began to grow less social and the mood of his paintings underwent a subtle change. During the summer of 1880, he moved to the relative solitude of Ten Pound Island near Gloucester, Massachusetts, and painted the Promenade Along the Beach (Museum of Fine Arts, Springfield, MA). This shows the same stylish ladies he had long been painting. The ladies, armed with Japanese fans, were taking their same innocent, fashionable Promenade Along the Beach as before, but this time, behind their backs, the sky had grown strangely dark and menacing. Not much longer the elemental forces of nature were about to be unleashed.

Homer launched his transformation with a change of scenery. In the spring of 1881, he set off for the North Sea coast of England and spent almost two years at the mouth of the Tyne River where Turner had once served an apprenticeship to the raging sea. There he saw the simple fishermen stoically confront the waters' mighty whims.

When Homer returned to America late in 1882, survival, not social status had become the central issue of his art. He moved to the water's edge at Prout's Neck, Maine and there, in direct contact with the ocean, but sequestered from the mass of humanity, he created his sagas of the sea. Now his fine and delicate ladies were swept, swooning helplessly, into the roiling waters by the most unsocial storms. Only the heroism and strength of rugged men could save them.

From time to time the storms might slacken off, but some new vagary of the weather would always threaten to close. So it was in The Fog Warning (Fig. 10-19). The pale, late afternoon sky above with a row of pink stratocumulus or altocumulus near the horizon seems to guarantee warm, placid weather. But then there is the advancing fog bank. The fisherman sees it and is rowing for all he is worth to get back with his day's catch to the safety of his ship before he is engulfed in zero visibility.

In constructing The Fog Warning, Homer propped a dory against a sand dune so that it would look like it was riding diagonally up a steep wave. He then got his neighbor, Henry Lee to pose in the boat and poured a pail of water over his head to make the whole scene convincing, or perhaps as a joke. In any event, this baptism immortalized Lee.

An approaching fog bank was no joking matter to the local fisherman for it made them feel their mortality. Fog is a frequent visitor to the cold coastal waters of Maine, and the adjoining Grand Banks of Newfoundland is the fog capital of the world. These fogs are the children of two ocean currents that run side by side. The cold Labrador Current flows down the coastline from the northeast, while further seaward the warm Gulf Stream flows in the opposite direction. At the boundary between the Labrador Current and the Gulf Stream, the
color and temperature of the water both change abruptly. Whenever the wind passes from the much warmer Gulf Stream to the cold coastal waters the air is cooled by contact and a dense fog a few hundred feet thick almost inevitably results. This happens roughly half the days of the year.

![Image](66x464 to 294x610)

**Fig. 10-19. Winslow Homer. The Fog Warning. 1885. Museum of Fine Arts, Boston.**

Fog does not always have such sharp edges as in *The Fog Warning*, but Homer's fog bank is no mere figment of the imagination (Fig. 10-20). Well defined walls of fog sometimes mark the leading edge of advancing cold air masses and have the same air motions as in the vortex at the edge of thunderstorm downbursts. Ragged corruscations in the fog bank will sometimes make these motions visible, so that you can actually see the air rising and then curling back on itself. Indeed, Homer astutely included two strands of fog that rise above the head of his fog bank and then tilt back toward its body.

If we look back to *The Fog Warning* we might ask if the fisherman will make it to the safety of his ship before the advancing wall of fog closes in. Homer might have smiled if we asked this question and we must cross the Gulf Stream for his answer. In 1898, Homer returned to the Bahamas and one result was his painting, *The Gulf Stream* (1899, Metropolitan Museum of Art, New York). The painting shows one of the waterspouts that form when polar air pours from the land over the Gulf Stream, gets heated by the warm waters, and swirls upward. In the Gulf Stream a black man reclines on the deck of a small broken masted boat, which is tossed by the waves and surrounded by hungry sharks. Adding insult to injury, the spout whirls away in the distance although a large clipper ship can be seen at the horizon. After being repeatedly asked what the ultimate fate of the man would be, the taciturn Homer finally replied,

![Image](318x416 to 542x555)

**Fig. 10-20. The Wall of Fog. Pacific Palisades, 6 January, 1986.**

You can tell these ladies that the unfortunate negro who is now so dazed & parboiled, will be rescued & returned to his friends and home, & ever after live happily.


Perhaps that is what we should tell his ladies, but no one can deny the ominous tone in Homer's later works.

I chose to analyze the *Isle of the Dead*, the *Toilers of the Sea* and *The Fog Warning* solely because each uses meteorology to invoke from the depths a dark and hitherto unknown side of nature. It was only in retrospect that I noticed another striking parallel. Each is set on the sea with only a small boat. Ironically, this was the time that huge ocean liners first powered their way around the world. It was the time that
massive bridges were first spanning the great rivers. It was the time that telephones were finally linking the world. It was the time that electricity was lighting it. Nevertheless, something new and frightening was emerging amid all our technological conquests. The devices that facilitated communication were powerless to eliminate our sense of loneliness, and the massive structures and engines that we created left people feeling as powerless as ever in their daily lives. If anything, these advances merely heightened people's awareness of their own personal insignificance. The painters chose small boats under menacing or eerie skies far from the mainland because they wanted settings that best suited these uneasy feelings. In a world whose population was growing explosively, we no longer had the means to deny we are

Alone, alone, all, all alone,
Alone on a wide, wide sea!

Samuel Taylor Coleridge. Rime of the Ancient Mariner.

Vincent van Gogh did not need the sea to show that we are all alone in a world rocked by a sea of violent emotions. He would, if need be, set the sky and earth into convulsions to suit his purpose.

But despite all van Gogh's personal convulsions, nature was his constant source of inspiration and he remained unwilling or unable to create scenes solely out of his imagination. No matter what distortions he introduced, everything van Gogh painted he derived almost directly from what he had seen, and his works remain a chronicle of the weather he experienced.

Van Gogh had art in his blood from an early age. His grandfather and uncle were successful art dealers. He began his career as a salesman in the London branch of the international art firm of Goupil & Cie, but improper behavior following an unrequited love soon led to a summary expulsion from the showroom. For the next few years van Gogh shifted almost aimlessly from one career to another. But only after his six month contract as an evangelist in an impoverished coal mining town in the Borinage district of Belgium was not renewed did he finally decide to be a painter. Then, with his brother, Theo, as his sole source of support, Vincent began to grope his way slowly toward mastery.

From 1880 to 1886, van Gogh lived in Belgium and Holland. There he painted mostly overcast skies ruled by stratiform clouds. Sometimes the weak sun almost penetrated nearly translucent altostratus, but more often the cloud cover was opaque. About one third of his scenes were foggy and, true to the cold, dismal winters of the 1880's, many of these were covered by a mantle of snow. When openings appeared in the sky, the stratus gave way to stratocumulus or innocuous puffs or streets of cumulus.

When van Gogh moved to Paris early in 1886, he was introduced to the light and color of the Impressionists, but this had no immediate effect on his meteorology. If anything, the atmospheric visibility of his early Parisian landscapes actually decreased, probably in response to Paris's polluted atmosphere. But the moment the horribly cloudy and cold winter and spring of 1887 gave way to an abnormally warm and sunny Parisian summer, van Gogh cleared his skies and adopted the Impressionist palette and techniques.

When dismal fall and winter weather returned, Vincent's skies clouded over once again. Then, after three weeks of almost solid overcast, wet weather in February of 1888, Vincent fled south to find sun and immortality in Arles.

Oddly enough, when van Gogh arrived in Arles, the ground was covered with a foot of snow and snow was still falling. The weather remained wintry in Arles for about a month and his first paintings there have almost Dutch
skies. But late in March, 1888, spring burst into bloom and the approaching Mediterranean summer evaporated the clouds.

The Mistral also helped to clear the skies and dictate Van Gogh's schedule. Life around Arles must make obeisance to the Mistral. On clear nights, mostly in the winter half of the year, air in the highlands of central France loses heat rapidly to space. As the air cools and grows dense, it pours southward down the Rhone River Valley towards the Gulf of Lyon. Some distance upriver from Arles the valley narrows, funneling the moderate winds and accelerating them to hostile speeds. By the time the often cloudless Mistral reaches Arles, it can blow at full gale force.

So, the ever intense Van Gogh went out into the sunny, windswept fields around Arles and swept the Impressionist veil of powder and puffs from his canvases. His paintings in Arles have high visibility and little cloud cover. His cloud types also changed. The lowlying decks of stratus virtually disappeared to allow a view of the delicate beauty of cirrus. In Arles, Vincent's cumulus became the dominant cloud form almost by default but remained small and innocuous.

It was in Saint-Remy that van Gogh's cumulus grew to menacing proportions and his works attained the full measure of turbulent expressiveness he is best known for. While in Arles, he began to suffer from attacks that resemble epilepsy but which may have been brought on by an addiction to absinthe. Early in May, 1889, he voluntarily placed himself in the asylum at Saint-Remy.

From the barred window of his asylum cell, he watched the ceaselessly unfolding drama of the skies. The weather at Saint-Remy was unusually disturbed in May and June 1889 and may have prodded van Gogh to his new, turbulent vision. On May 8, he drew the rising Sun over Walled Wheat Field (Rijksmuseum Kroller-Muller, Otterlo) with a single large cumulus that fills the entire right half of the sky. Never before had van Gogh even hinted that cumulus could grow large.

A month later, when van Gogh was finally allowed outside his room, he apprehended a giant, hand-shaped cumulus retreating in the eastern sky in the Mountainous Landscape Behind the Asylum (1889, Ny Carlsberg Glyptotek, Copenhagen). The distinct undulations of the cloud's base were almost certainly caused by wavy airflow over the Alpilles. They constitute crucial evidence that the cloud was derived from a specific observation. This was one of the few clouds that Vincent referred to, for in a letter describing the painting he wrote of


It was during the stormy weeks that followed, that van Gogh finally saw the earth and heavens move. A turbulent, writhing, mushroom-shaped cumulus punctures the higher atmosphere in its ascent above the Cypress (1889, Metropolitan Museum of Art, New York), revealing an aerial struggle no European artist other than Leonardo had ever thought of before. It was a few days earlier that Vincent first saw the wind bend the gnarled Olive trees and even the crusty mountains in the Olive Trees with the Alpilles in the Background (Fig. 10-21) while mountain wave clouds possibly with ice crystal tails (as in Fig 10-22) hovered in the sky above.

The Olive Trees was the companion piece for the Starry Night (1889, Museum of Modern Art, New York), a tour de force whose astronomy has been analyzed in separate studies by Albert Boime and Charles Whitney. The Starry Night is apparently a composite scene, done between the 16th and 18th of June,
1889, during a relative lull between two periods of unusually stormy, overcast weather. It shows the sky at about 4:00 AM when the eastern horizon is first beginning to brighten. Van Gogh misrepresented both the phase and location of the rising crescent moon, which on those nights was just past full. The moon's orange color is, however, correct and results when the shorter light waves are scattered as they pass through the thicker atmosphere near the horizon. The whirling star forms that give the painting its unique character might represent Vincent's vision of the Milky Way, or of the spiral nebulae that had recently been photographed for the first time.

Fig. 10-21. Vincent van Gogh. Olive Trees with the Alpilles in the Background. 1889, Collection of Mr. and Mrs. John Hay Whitney, New York.

Vincent continued representing turbulent skies through the summer. Then, as summer faded into fall, the weakening sun no longer raised great cumulus and Vincent's skies also settled down. Several attacks, beginning in the summer and recurring at odd intervals through the next spring left him physically and emotionally exhausted. Hoping to recover some sense of balance, the profoundly unhappy Vincent headed back north to the vicinity of Paris and settled in nearby Auvers-sur-Oise at the end of May.

Auvers was van Gogh’s last stop. Here, his skies darkened in response to some inner calling and in response to the weather. June, 1890 was cloudier and colder than average but July turned truly miserable. Rain fell every day from June 30 to July 11, during which time it remained almost continuously overcast and much colder than normal. Under these woeful conditions, Vincent began to use the deepest cobalt blue to represent day as well as night and overcast as well as clear skies.

Around July 10, Vincent wrote he had painted three "vast fields of wheat under troubled skies" since returning from Paris on the 6th, and added, "I did not need to go out of my way to express sadness and extreme loneliness".

Fig. 10-22. Mountain wave clouds with ice crystal tails over the Front Range of the Rocky Mountains at Littleton, CO. Photographer, Robert Gedzelman.

The Wheat Field Under Clouded Sky is probably one of these (Fig. 10-23), but is its sky troubled? With the exception of the cobalt blue horizon sky all the other signs indicate that van Gogh was representing the sky as it appears at the end of a winter storm (Fig. 10-24), when cooler, drier air is just beginning to lift the clouds. The sky darkens at the horizon as it can only when it is overcast. White fractocumulus appear below the general cloud cover while scud hugs the ground as it does when cooler air comes in contact with warmer, rain-soaked ground. The air is so clean that every feature of the field can be seen distinctly up to the point where the cloud cover drops to the horizon like a curtain to terminate the view.
Indeed, Vincent's letter was as ambivalent as the painting. Directly after mentioning sadness and loneliness, he added, "I almost think these canvases will tell you what I cannot say in words, the health and restorative forces that I see in the country." But when nature's restoring forces cleared the skies a few days later they no longer held any promise for Vincent, who took his life on a day of fine weather at the end of July.

Fig. 10-23. Vincent van Gogh. Wheat Field Under Clouded Sky. 1890. Rijksmuseum Vincent van Gogh, Amsterdam.

Fig. 10-24. Altostratus with tilted scud below as cold dry air moves in from the north at the end of rains from a passing low pressure area.

The tectonic force of van Gogh's earth and skies was further metamorphosed in a single, extraordinary meteorological painting by Edvard Munch. Before Munch first visited Paris in 1889, he had painted pleasantly inoffensive landscapes but the art of the French began to etch its way into his troubled soul. In April of 1891, he encountered the convulsed world of Van Gogh for the first time at the Salon des Independents and returned to Oslo to begin painting troubled scenes of personal isolation and pubescent shame. Then, one evening in 1893 he memorialized in The Scream (Fig. 10-25) a sunset the world may never forget.

The Scream is the incarnation of terror. In it, the tectonic but solid world of Van Gogh has been plasticized into an undulating universe whose only firm foundation, ironically, is the man-made bridge. The Scream may seem at first impression to be a purely personal vision, but it contains an identifiable view of Oslo and its fjord from the south. It is also a meteorological masterpiece of the highest order. Munch described the moment of inspiration.

I was walking along the road with two friends. The sun set. I felt a tinge of melancholy. Suddenly the sky became a bloody red.

I stopped, leaned against the railing, dead tired [my friends looked at me and walked on] and I looked at the flaming clouds that hung like blood and a sword over the blue-black fjord and city.

My friends walked on. I stood there trembling with fright. And I felt a loud, unending scream piercing nature; it seemed to me that I could hear the scream. I painted this picture, painted the clouds as real blood. The color shrieked – This became The Scream from the Frieze of Life.

Munch did not note the date of his inspiration when he wrote this account later in 1893 during a stay in Nice. This makes it impossible to verify the actual weather, but there are a number of similar skies such as one scene of wavy smoke clouds during a Santa
The Santa Ana is a dry downslope winds from the northeast that is well known to residents of the Los Angeles Area. The dry air in the lee of the nearby mountains seldom allows clouds but often helps spread fires, whose smoke then traces the wavy air motions. The fjord of Oslo is also ringed by hills and mountains large enough to set off wave clouds, particularly when the wind comes from west or east. Munch's singularly wavy vision is most likely the crystallization of mountain wave clouds at sunset.

Troubled Europe, however, had no shortage of troubled painters to take Munch's place and their various styles took off in all directions. One ultimate outgrowth was abstract art. Vladimir Kandinsky tells the story of a pivotal event in his life and presumably in the history of abstract art. One day in 1910, he returned to his Munich studio and was thrilled by the sight of one of his own works. It took him a few moments to realize the painting was standing on its side. From that point, Kandinsky considered himself released from the bonds of external reality.

In 1912, Kandinsky published his manifesto, Concerning the Spiritual in Art. In it he wrote, "Today we are seeking the road which is to lead us away from the external to the internal basis." This meant that art could no longer be judged solely by objective criteria. Only the artist could place a value on his work - the damning public be damned. How very self serving!

Two years before Kandinsky's manifesto appeared, the novelist, Jakob Wassermann diagnosed the same tendency in the avant-garde writers,

The writers...sensing their isolation, their alienation, the absence of social
coherence and an inner legitimacy based on myth, withdraw into their inner life as into a cave, or proclaim a tyrannical self-sufficiency without finding a bridge to their society and to mankind. On one side a people in feverish activity, all action, all drive, but also wholly without God; on the other side the poet in feverish torment, activated by his dreams, lonely, and deifying himself.

quoted from Tannenbaum, 1900. p 377.

No painting could confirm this dismal diagnosis better than Oscar Kokoschka's The Tempest (Fig. 10-27). The Tempest simultaneously describes a spiritually shipwrecked world on the eve of the First World War, and a failed love affair. The two intertwined lovers tossed about in the midst of the swirling chaos are Kokoschka himself and his former mistress, Alma Mahler, the widow of Gustav Mahler. Night has fallen on the scene and it is a dark night, indeed. Kokoschka, however, is wide awake and all tension while Alma sleeps gently and appears to be totally protected from the surroundings. These lovers dwarf the landscape much as did Jesus, Mary and the various angels and saints in medieval paintings, but they certainly do not provide the viewer with any measure of comfort or solace.

Fig. 10-27. The Tempest. 1914. Oscar Kokoschka. Kunstmuseum, Basel.

In The Tempest, Kokoschka went a long way toward shutting out the sky. Very little light comes from the dark and almost medieval strip of sky above a horizon line that has been lifted almost to the top of the painting. After 500 years of unrelenting, conscientious labor to lower the horizon and shed light on the human scene, Kokoschka, in a single step, pulled the shade over much of our hard won heritage. The Tempest is either an attempt to return us to the Dark Ages or a damning assertion that we already have.

Look at the crescent-shaped moon with its corona! Just as in van Gogh's Starry Night, these lunar features always add to the weirdness of a scene. But whereas van Gogh made sure to aim the lighted side of the moon downward towards a sun still below the horizon, Kokoschka aimed it up to the zenith in defiance of all natural law. With such a moon, The Tempest should be taking place in broad daylight. Perhaps it is daytime, for the darkness may only be spiritual.

What could possibly have been the inspiration for such a possessed work?
Kokoschka had depicted the eerie beauty of the moonlit corona the year before in the *Dolomite Landscape: Tre Croci* (1913, Hamburg, Prof. E. Horstmann Collection), during a trip with Alma through the Alps to Italy. But his ugly art emerged in Vienna, the musical capital of the world and one of Europe's great cultural centers. Yet Kokoschka saw another Vienna ready to erupt beneath the surface, and he later defended his prewar art, saying,

My early black portraits arose in Vienna before the World War; the people lived in security yet they were all afraid. I felt this through their cultivated form of living which was still derived from the Baroque; I painted them in their anxiety and pain.

*German Expressionist Painting: Origin and Evolution*. Jean Selz. p 165.

If, in fact Kokoshka exposed secret fears it was no wonder he was not universally liked. Most Viennese found his art to be highly offensive, and it was viciously attacked. The Austrian Crown Prince was so incensed by Kokoschka that he said, "every bone in his body should be broken."

But was Vienna's society as dissipated as Kokoschka implied in his words and in his works? This world capital of music and the waltz had been the home of Schubert, Beethoven, Johann Strauss Sr. and Jr., Richard Strauss and Johannes Brahms. Even Wagner spent some time there. It was a cultural magnet of the first order.

Vienna had not always been so favored. Since Roman times it stood at Europe's eastern gate and bore the brunt of attacks from Asian hordes. Vienna was besieged as late as 1684, when the Turks almost overran its walls. But after 1857, when the threat of attack had faded to a dim memory, the broad ring of walls and open fields surrounding the central city proved to be a bonanza for a carefully planned program of development and modernization of the city's basic services. To this day, Vienna's character is largely defined by the parks, public buildings and luxury apartments that line the wide avenues of the famous Ringstrasse.

The generation responsible for Vienna's metamorphosis was proud of its tradition of liberalism and its devotion to culture. Its children were raised to be artists but were kept from the reins of political power by the crumbling Hapsburg Monarchy and by the flood of impoverished and often homeless immigrants that swelled the city's population to two million. In this climate, where culture was put on a separate plane from real life, Vienna's politically impotent writers, musicians and artists responded by creating increasingly imaginary and irrational worlds. At the same time, nationalistic hatreds and suspicions were aroused to the boiling point in the underclass cauldron that lived beneath the waltzing feet of the cultural elite. It was in this Vienna that Nazi rhetoric was first formulated and it was in this Vienna where Adolf Hitler, who had come as an aspiring artist in 1906, learned it.

All the basic forces that led to the increasing subjectivism of the arts were well represented in Fin de Siecle Vienna, and Kokoschka was certainly not that city's only advocate of the avant-garde. The sexual licentiousness and selective distortion of Gustav Klimt's art preceded Kokoschka by about a decade. Anton Bruckner and Gustav Mahler wrote highly romantic music that was increasingly dissonant and Arnold Schoenberg finally dispensed entirely with tonality. Viennese literature also had its modern spokesmen of alienation and absurdity. Fittingly, Sigmund Freud, the master of exposing the sexual and irrational beneath the prudish facade of decorum, was a homegrown product of Vienna. All of these activities and discoveries were made in a paranoid Europe that had been frantically arming itself to the teeth since the 1880's in preparation for the inevitable struggle for survival of the fittest.
The Tempest is thus one of the great creations that mark the end of an age. Reason, though acknowledged to be indispensable for modern life, was seen as inadequate, and it was despised. There are serious consequences, however, of living in a world without rational standards, as Joseph K sadly discovered in Franz Kafka's *The Trial* (1914), another masterpiece completed on the eve of the Great War. In *The Trial* a secret, inner world where normal rules of conduct have no meaning gradually ousted the outer, rational world, and Joseph K was doomed.

An unrelieved abstracting tendency in art contains the same self-destructive characteristics. Even Kokoschka recoiled from it, saying, "Non-objective art is itself the worst of all our spiritual enemies." Freed from all rational constraints on subject matter, the sky disappeared from mainstream art on the eve of World War I. When that happened, the guiding light of rationality in human relations also flickered out. Vienna had dismantled its medieval defenses against the barbarians a bit too soon. But then again, those defenses weren't even relevant, for this time Vienna, as all Europe, was besieged and attacked by the barbarian within.