Donald Judd

Donald Judd has set up a "company" that extends the techniques of abstract art into unheard-of places. He may go to Long Island City, and have tinsmiths, the Bernstein Brothers, put "Pittsburg" seams into some galvanized iron boxes, or he might go down to Allied Plastics in Lower Manhattan and have some cut-to-size ~~some~~ Rohm-Haas "glowing" pink plexiglass. Judd is always on the lookout for new finishes, like Lawax Wrinkle Finish, which ~~[illegible]~~ a company ~~[illegible]~~ pamphlet ~~[illegible]~~ says, "combines beauty and great durability". Judd likes that combination, and so he might "self" spray one of his fabricated "boxes" with it. Or maybe he will travel to Hackensack N.J. to

(2)

Check out a lead he got on a new kind of Zinc based paint called Galvanox 2 which is comparable to "hot-dip" galvanizing. These procedures tend to baffle art-lovers. They either wonder where the "art" went or where the "work" went, or both. It is hard for them to ~~[illegible]~~ that Judd is busy ~~expo[illegible]~~ extending art into ~~"new [illegible]~~ new mediums. ~~Explo[illegible]~~ this intricate new approach to technique has nothing to do with ~~[illegible]~~ sentimental notions about ~~[illegible]~~ "labor" like "pride in craftsmanship". Judd is not a specialist in a certain kind of labor, but a whole artist ~~[illegible]~~ engaged in a ~~[illegible]~~ multiplicity of techniques. ~~[illegible]~~ His esthetic position is awesome and original.

(3) a

In 1963, Judd had an exhibition at the Green Gallery of plywood and aluminum structures, they disclosed an awareness of physical "mass" in the form of regular intervals of bulk. The intrinsic virtue of "primary matter" was also very much in evidence. Each work offered a different solution for the confinement of space. One wooden box (19½"×45"×30½"), for example, contained a series of recessed slats, exposed only by a slight concave valley on top of the box. this valley took up only about 20% of the top surface. The slats were more closely spaced at one end, than the other; as a result, space seemed squeezed out. Inertia appeared to be subdivided into remote areas of force. On another work, a black pipe-like axis was polarized between two massive plywood squares (4'×4'), yet no rotation seemed possible because the black pipe was flanked by six polarizing square wooden beams that were bolted into the wooden squares. this non-rotational aspect

(3) a' part 1

reverses the usual meaning.
of inertial force: Matter, ~~and~~ not
energy, had become Judd's prime
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trary to the abstract notion that
energy is the direct result of mass.
~~[illegible]~~
~~[illegible]~~
~~[illegible]~~
~~curiously still~~, ~~[illegible]~~ "created nature" seems to have been ab-
All "created nature" seems to have been ab-
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physical mass; ~~[illegible] structure.~~
~~into artifice [illegible]~~
~~Just~~ as the Mannerist artists
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related to the non-objective world
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over. over

Perhaps "primary matter" and "anti matter" are the same thing.

(3)

a part 2

A lack of concionsness of mass seems to have caused the demise of "action-painting", and that might explain also the dissolution of "assemblage" and the happening". If action, energy, motion, and other kinetics are the main motives of an artist, his art is quick to enter entropy.

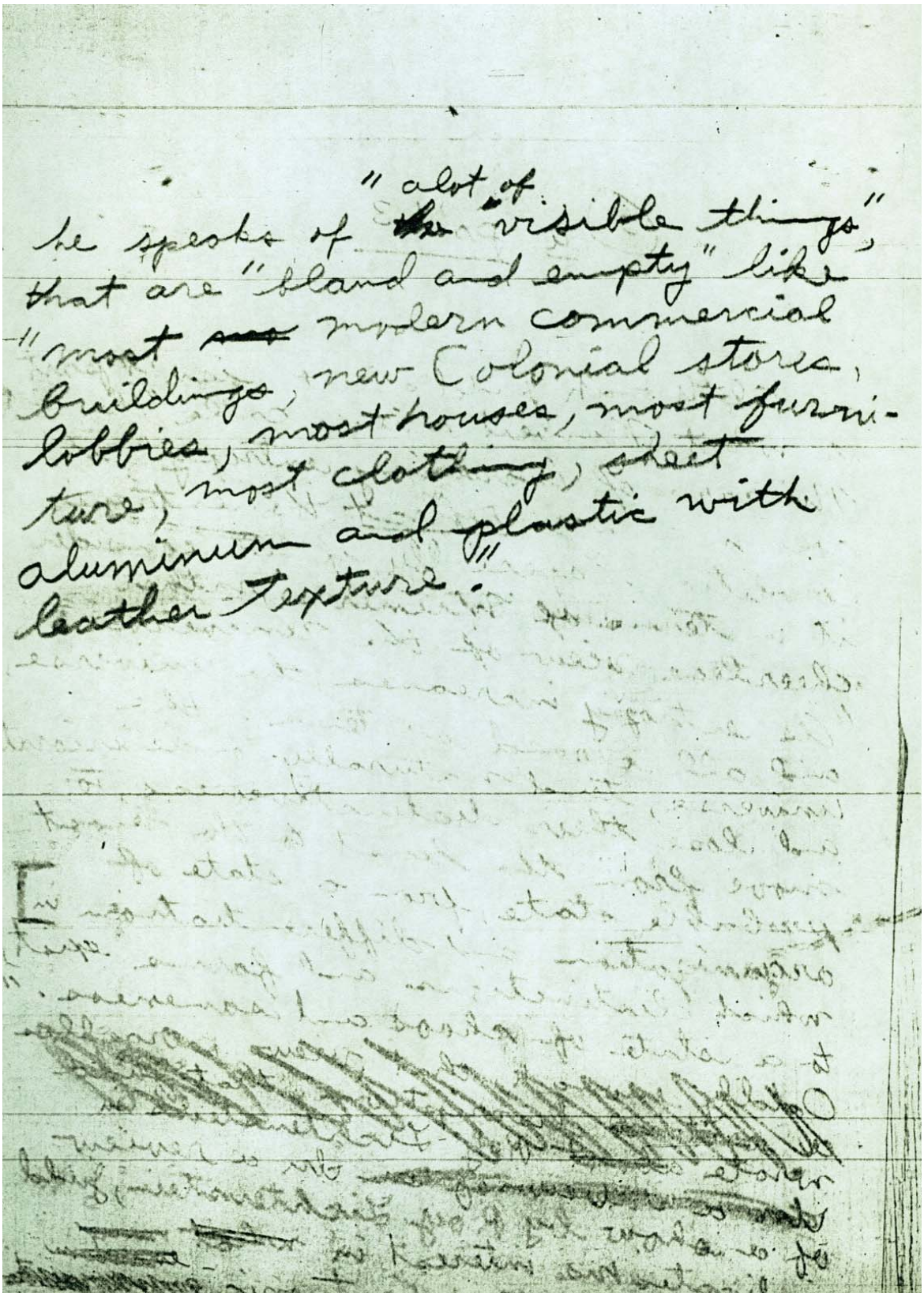
Consciousness

(3) a Part 3

Although Judd's art isn't part of what Norbert Wiener calls "the Niagara of increasing entropy", it does in a way reflect the entropic condition. Especially if we consider it in terms of Wiener's rather cheerless view of the universe: "As entropy increases, the universe, and all closed systems in the universe, tend naturally to deteriorate and lose their distinctiveness, to move from the least to the most probable state, from a state of organization and differentiation in which distinctions and forms exist, to a state of chaos and sameness."

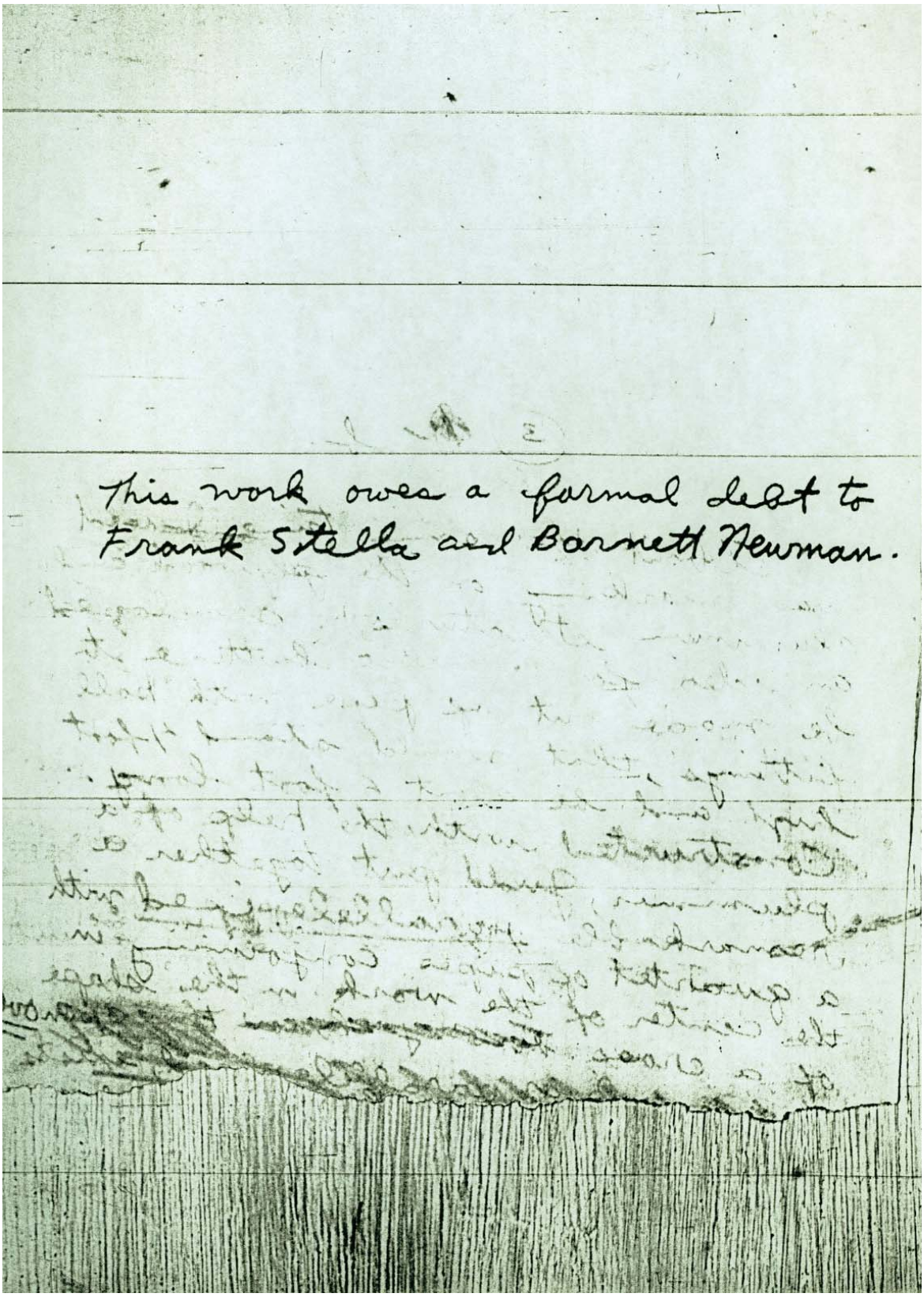
[redacted] In a review of a show by Roy Lichtenstein, Judd indicates his interest in [redacted] entropic conditions,

OVER


he speaks of "alot of visible things" that are "bland and empty" like "most modern commercial buildings, new Colonial stores, lobbies, most houses, most furniture, most clothing, sheet aluminum and plastic with leather texture."

(3) b

About the same time Judd was working on the plywood and aluminum structures, he developed an idea for a cubic lattice to be made out of pipe with "ball fittings", that would stand 4 foot high and be about 6 foot long. Constructed with the help of a plummer, Judd put together a remarkable ~~parallelepiped~~ with a quartet of pipes conjoining in the center of the work in the shape of a cross. [illegible] over [illegible]


This work owes a formal debt to
Frank Stella and Barnett Newman.

unconscious

3

In the work of Frank Stella and Barnett Newman the "framing support" is both hinted at & parodied. Clement Greenberg ~~makes this~~ recognized an element of "parody", perhaps unconscious, in Barnett Newman's "field" paintings, which called attention to the "frame". This element becomes less of a parody in Frank Stella's "shaped canvases", ~~but~~ more of a conscious fact. Judd's symmetric, free-standing structure eliminated all doubts about the importance of the framework ~~by~~ its formal value by asserting ~~by~~ reference to "flat" painting - all surfaces vanish in this important work, but return later in his fabricated works with startling new implications. Judd exhibited ~~this work~~ his parallelepiped on Welfare Island in a group show

over

organized by the "Park Place Group," since then the work has been dismantled, and stored away in Judd's loft.

(4) a

Judd's sensibility encompasses geology, metallurgy, mineralogy, and others. He has an excellent collection of geologic maps, which he scans from time to time, not for their intended content, but for their exquisite structural precision. His own writing style has much in common with the terse, factual discriptions one finds in his collection of geology books. Compare this passage from one of his books, the Geology of Jackson County, Missouri to his own criticism: "the interval between the Cement City and the Raytown limestones varies from 10 to 23 feet. the lower three-quarters is an irregularly colored green, blue, red, and yellow shale which at some places contains calcareous concretions. Usually the red shale

over

occurs in an irregular ~~band~~ band
through the middle, dividing
~~an~~ an upper blue from a lower
~~green and buff shale.~~ " And now
an ~~excerpt~~ excerpt from Judd's
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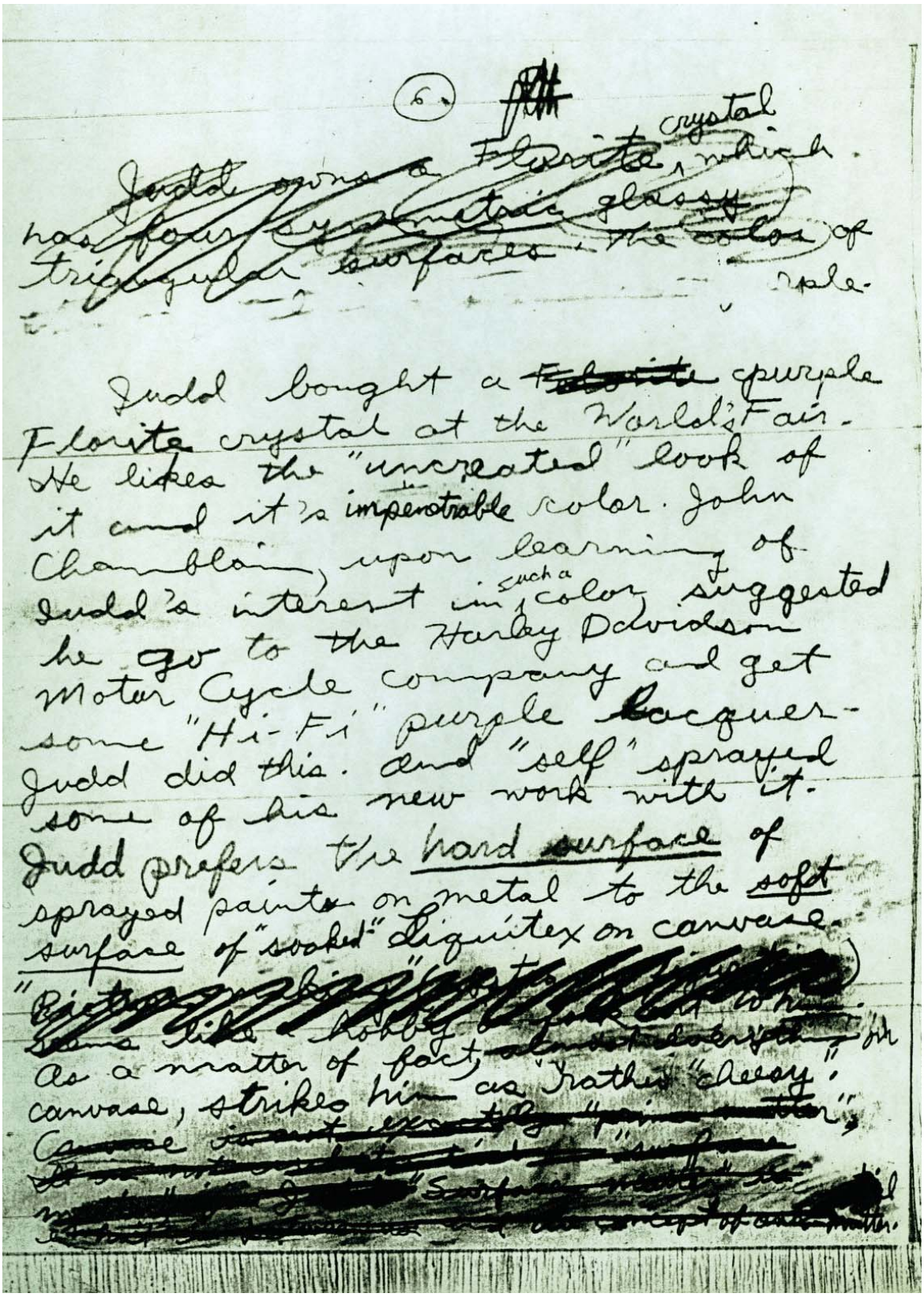
Such an intuitive approach to crystral or solid-state structure exists to a certain extent in the works by artists involved in "The New Abstraction", such as Larry Poons, Will Insley, Peter Hutchinson, Frank Stella, Charles Hinman, and Sol LeWitt. A resistance ~~to watery~~ to ~~against~~ ~~[illegible]~~ less watery and gaseous concepts seem to relate these artist together. A mixture of ice-cold aloofness and ecstatic timelessness exists in such an approach. Judd shares this abstract passion. In other words, his geometric exactness seems always to be on the verge of exploding. But a powerful suspense factor prevents this from happening.



(6)

Judd owns a Florita crystal which has four symmetrical glassy triangular surfaces. The color of [illegible]

Judd bought a purple Florita crystal at the World's Fair. He likes the "uncreated" look of it and it's impenetrable color. John Chamblain, upon learning of Judd's interest in such a color suggested he go to the Harley Davidson Motor Cycle company and get some "Hi-Fi" purple lacquer. Judd did this. And "self" sprayed some of his new work with it. Judd prefers the hard surface of sprayed paint on metal to the soft surface of "soaked" Liquitex on canvas. "Painting" [illegible] As a matter of fact, [illegible] canvas, strikes him as "rather" "dreary". [illegible]

The works that Judd showed in the VIII Sao Paulo Bienal are most compelling. The salient feature of the work is a kind of reversible ups and down quality. It is impossible to tell what is hanging from what or what is supporting what. Ups are downs and downs are ups. An uncanny materiality inherent in the surfaces engulf the basic structure. Both surface and structure exist simultaneously in a suspended condition. What is outside vanishes to meet the inside, while what is inside vanishes to meet the outside. The chimerical idea of "anti-matter" overruns, and fills everything, making these delicate works verge on the point of disappearance. The important phenomenon is always the basic lack of substance at the core of the "facts". The more one tries to grasp the surface-structure, the more baffled one gets. It seems to have no natural equivalent to anything physical, yet

(8)

all it brings to mind is physicality.
In the one untitled work, one sees five galvanized iron verticals sprayed a ~~stelli~~ blue contrapuntal to one brass horizonal. The brass horizonal is an "extruded" square tube with visable open ends, while the iron verticals are made of folded "star-spangled" sheet with invisable open ends. The entire work appears to be "draining" emptiness.

In a second "untitled" work, one sees four galvanized iron cubes contrapuntal to one aluminum horizonal. Judd has made four "holes" disappear by surrounding them with four surfaces each, but only one surface remains intact on each cube, and that is on the two inner cubes. The two outer cubes have both side surfaces and full front-surfaces, while two inner cubes have full front-surfaces but not the full sides. This in turn makes for three "gaps", and they serve as "missing edges". Each missing edge is sandwiched by

two "Pittsburg" seams. ~~[illegible]~~ ~~a total of six~~ ~~[illegible]~~ Six seams make ~~three~~ gaps, but ~~8~~ eight seams make three gaps ~~and~~ plus two full sides, not to mention the aluminum tube which adds four "hidden" corners to the three gaps. ~~[illegible]~~

~~[illegible]~~

In a third "untitled" work, one sees five painted aluminum angles contrapuntal to one aluminum horizontal. the angles form four different gaps ~~of~~ that exist between the regular intervals of the angles. the Ups and Downs come to an almost perfect equilibrium. Because Judd has "realized" ~~his facts~~ the factual to such an extent, his works are fantastic.

Donald Judd has set up a "company", that extends the techniques of abstract art into unheard-of places. He may go to Long Island City, and have tinsmiths, the Bernstein Brothers, put "Pittsburg" seams into some (Bethcum) iron boxes, or he might go down to Allied Plastics in Lower Manhattan and have cut-to-size some Rohm-Haas "glowing" pink plexiglass. Judd is always on the lookout for new finishes, like Lavax Wrinkle Finish, which a company pamphlet says, "combines beauty and great durability". Judd likes that combination, and so he might "self" spray one of his fabricated "boxes" with it., Or maybe he will travel to Hackensack, New Jersey to check out a lead he got on a new kind of zinc based paint called Galvanox, which is comparable to "hot-dip" galvanizing. These procedures tend to baffle art-lovers. They either wonder where the "art" went or where the "work" went, or both. It is hard for them to comprehend that Judd is busy extending art into new mediums. This [redacted] new approach to technique has nothing to do with sentimental notions about "labor". There is no subjective craftsmanship . Judd is not a specialist in a certain kind of labor, but a whole artist engaged in a multiplicity of techniques. [redacted].

In 1963, Judd had an exhibition at the Green Gallery of plywood and aluminum structures. They disclosed an awareness of physical "mass" in the form of regular intervals of bulk. The intrinsic virtue of "primary matter" was also very much in evidence. Each work offered a different solution for the dislocation of space. One wooden box (19½" X 45" X 30½"), for example, contained a series of recessed slats, exposed only by a slight concave opening on top of the box. This opening took up only about 20% of the top surface. The slats were

more closely spaced at one end than the other; and as a result, space seemed squeezed out. Inertia appeared to be subdivided into remote areas of force. In another work, a black pipe-like axis was polarized between two massive plywood squares (4' X 4'), yet no rotation seemed possible because the black pipe was flanked by six polarizing square wooden beams that were bolted into the wooden squares. This non-rotational aspect breaks the suggestion of dynamic space. Matter, not motion had become Judd's prime concern. Judd's structures brought into question the very form of matter, as a matter of fact, by being contrary to the abstract notion that movement is the direct result of mass. All "created nature" seems to have been abstracted out of Judd's concept of physical mass. Just as the Mannerist artists of the Sixteenth Century permuted the facts of the Classic Renaissance, so has Judd permuted the facts of Modern Reality. By such means, Judd discovered a new kind of "architecture", [redacted], yet his contrary methods make his architecture look like it is built of "anti-matter". Perhaps "primary matter" and "anti-matter" are the same thing.

A lack of consciousness of mass seems to have caused the demise of "action-painting", and that might explain also the dissolution of "assemblage" and "the happening". If action, energy, motion, and other kinetics are the main motives of an artist, his art is quick to atrophy.

Although Judd's art isn't part of what Norbert Wiener calls "the Niagara of increasing entropy", it does in a way reflect the entropic condition. Especially, if we consider it in terms of Wiener's rather cheerless view of the universe: "As entropy increases, the universe, and all closed systems in the universe, tend naturally to deteriorate and lose their distinctiveness, to move from the least to the most probable state, from a state of organization and differentiation in

which distinctions and forms exist, to a state of chaos and sameness.". In a review of a show by Roy Lichtenstein, Judd indicates his interest in entropic conditions. He speaks of "alot of visible things", that are "bland and empty" like "most modern commercial buildings, new Colonial stores, lobbies, most houses, most furniture, most clothing, sheet aluminum, and plastic with leather texture".

[redacted] Judd was working on the plywood and aluminum structures, he developed an idea for a cubic lattice to be made out of pipe with "ball fittings", that stood 4 feet high and be about 6 feet long. Constructed with the help of a plumber, Judd put together a [redacted] parallelepiped with a quartet of pipes conjoining in the center of the work in the shape of a cross. This work owes a formal debt to Frank Stella and Barnett Newman.

In the work of Frank Stella and Barnett Newman the "framing support" is both hinted at and parodied. Clement Greenberg recognized an element of "parody", perhaps unconscious, in Barnett Newman's "field" paintings, which called attention to the "frame". This element becomes less of a parody and more of a conscious fact, in Frank Stella's "shaped canvases". Judd's symmetric, free-standing structure eliminated all doubts about the importance of the framework by asserting its formal value beyond any reference to "flat" painting. All surfaces vanish in this important work, but return later in his fabricated works with startling new implications. Judd exhibited his parallelepiped on Welfare Island in a group show organized by the "Park Place Group". Since then the work has been dismantled, and stored away in Judd's loft.

With Judd there is no confusion between the anthropomorphic and the abstract. This makes for an increased consciousness of structure, which maintains a remote distance from the organic. The "unconscious" has no place in his art. His crystalline state of mind is far removed from the organic floods of "action painting". He translates his concepts into artifices of fact, without any illusionistic representations.

Space in Judd's art seems to belong to an order of increasing hardness, not unlike geological formations. He has put Space down in the form of deposits. Such deposits come from his mind rather than nature. Instead of bringing Christ down from the cross, the way the painters of the Renaissance, Baroque, and Mannerist periods did in their many versions of The Deposition, Judd has brought space down into an abstract world of mineral forms. He is involved in what could be called, "The Deposition of Infinite Space". Time has many anthropomorphic representations, such as Father Time, but space has none. There is no Mother Space or Father Space. Space is nothing, yet we all have a kind of vague faith in it. What seems so solid and final in Judd's work is at the same time elusive and brittle.

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In Mineralogy, solidified masses of rock are called "concretions"; many of Judd's works suggest what could be abstract concretions of geological structure. Judd has brought into existence artifices of lime, clay, flint, sandstone, iron, etc. His strata is cantilevered off walls, while his deposits rest on floors. Some of his surfaces have the look of rock that is billions of years old. One thinks of a petrified world without any trace of life. Fossils don't even exist in it. Only barren surfaces with the characteristics of shale and ice. ~~Blocks of cryptic matter, without reason for being, simply exist.~~

The formal logic of crystallography, apart from any preconceived scientific content, relates to Judd's art in an abstract way. If we define an abstract crystal as a solid bounded by symmetrically grouped surfaces, which have definite relationships to a set of imaginary lines called axes, then we have a clue to the structure of Judd's "pink plexiglass box". Inside the box five wires are strung in a way that resembles very strongly the crystallographic idea of axes. Yet, Judd's axes don't correspond with any natural crystal. The entire box would collapse without the tension of the axes. The five axes polarize between two stainless steel sides. The inside surfaces of the steel sides are visable through the transparent plexiglass. Every surface is within full view, which makes the inside and outside equally important. Like many of Judd's works, the separate parts of the box are held together by tension and balance, both of which add to its static existance. This work was exhibited in the "Plastic Show" at The Daniels Gallery in the spring of 1965.

Such an intuitive approach to crystal or solid-state structure exists to a certain extent in the works by artists involved in "The New Abstraction", such as Larry Poons, Will Insely, Peter Hutchinson, Frank Stella, Charles Hinman, and Sol Lewitt. A resistance to watery and gaseous concepts seem to relate these artist together. A mixture of ice-cold aloofness and ecstatic timelessness exists in such an approach. Judd shares this abstract passion. In other words, his gemlike exactness seems always to be on the verge of exploding. But a powerful suspense factor prevents this from happening.

Judd bought a purple Florite crystal at the World's Fair. He likes the "uncreated" look of it and it's impenetrable color. John Chamberlain, upon learning of Judd's interest in such a color, suggested he go to the Harley Davidson Motorcycle Company and get some "Hi-Fi" purple lacquer. Judd did this and "self" sprayed some of his new work with it. Judd prefers the hard surface of sprayed paints on metal to the soft surface of "soaked" Liquitex on canvase. [redacted]

A reversable up and down quality was an important feature of the work which Judd showed in the VIII San Paulo Bienale. It is impossible to tell what is hanging from what, or what is supporting what. Ups are downs and downs are ups. An uncanny materiality inherent in the surface engulfs the basic structure. Both surface and structure exist simultaneously in a suspended condition. What is outside vanishes to meet the inside, while what is inside vanishes to meet the outside. The [redacted] of "anti-matter" overruns, and fills everything, making these very definite works verge on the notion of disappearance. The important phenomenon is always the basic lack of substance at the core of the "facts". The more one trys to grasp the surface-structure, the more baffled one gets. It seems to have no natural equivalent to anything physical, yet all it brings to mind is physicality.

(6) a

The physical structure supporting Nature remains invisable to the naked eye. Atoms, particles, electrons, protons, neutrons all have two things in common, all of them exist in a sub-microscopic condition, and are measured in terms of infinitesimal quantity. Judd reverses this scale of perception and brings the hidden physical structure into full view by replacing space with matter. His work exists as models of matter rather than illusions of space. The inversion of scale is what produces the impact of architecture; each "particle" becomes a unique structure, [illegible] facts. [illegible] the "looking-glass". If one could abstract the facts behind Lewis Carroll's "looking glass" one might turn up with something like the "facts" Judd has brought into this world.

In one untitled work, one sees five galvanized iron verticals sprayed a blue contrapuntal to one brass horizontal. The brass horizontal is an "extruded" square tube with visable open ends, while the iron verticals are made of folded "star-spangled" sheet with invisable open ends. The entire work appears to be draining emptiness.

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In a third "untitled" work, one sees five painted aluminum angles contrapuntal to one aluminum horizontal. The angles form four different gaps that exist between the regular intervals of the angles. Ups and downs come to an almost perfect equilibrium.

Because Judd has "realized" the factual to such an extent, his works are ____.

(8)

Now we shall take the three "untitled" works and view them as one, two, three. By doing this we shall effect an interplay among the three works as a single whole. One will be broken down into modular units as follows: A for brass horizontal and B for the iron vertical, ~~this~~ will stand as, $\frac{A}{B\text{-}B\text{-}B\text{-}B\text{-}B}$. Two will be broken down as follows: A for aluminum horizontal and C for the four cubes, this will stand as, $\frac{A}{C\text{-}C\text{-}C\text{-}C}$. Three will be broken down as follows: A for aluminum horizontal and D for five aluminum angles, this will stand as, $\frac{A}{D\text{-}D\text{-}D\text{-}D\text{-}D}$. The minus sign will stand for the gaps, seams, edges and corners, and will funtion as variants within variants and as infinite sets of abstract structure. The minus signs in aspects will be double standards and correspond inversely

(9)

to the whole. ~~(As three "untitled"~~ ~~works).~~ As a whole these three "untitled" works equal nothing or U-. What goes on below U will be our problem. ~~It~~ Each (—) possesses an infinite number of sub-edges, sub-seams, sub-edges, and sub-corners." It is precisely this sub-structure which brings Judd's work to the concept of anti-matter.

Most abstract artists might be said to be concerned with the physicality of perception, but because Judd's art is more specific than others because illusion plays no part in it. One is forced to speculate on its physicality in a very primal way.

Robert Smithson

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In 1963, Judd had an exhibition at the Green Gallery of plywood and aluminum structures. They disclosed an awareness of physical "mass" in the form of regular intervals of bulk. The intrinsic virtue of "primary matter" was also very much in evidence. Each work offered a different solution for the confinement of space. One wooden box (19½" X 45" X 30½"), for example, contained a series of recessed slats, exposed only by a slight concave valley on top of the box. This valley took up only about 20% of the top surface. The slats were

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Although Judd's art isn't part of what Norbert Wiener calls "the Niagara of increasing entropy", it does in a way reflect the entropic condition. Especially, if we consider it in terms of Wiener's rather cheerless view of the universe: "As entropy increases, the universe, and all closed systems in the universe, tend naturally to deteriorate and lose their distinctiveness, to move from the least to the most probable state, from a state of organization and differentiation in

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Developing about the same time as his earlier wood and aluminum structures, Judd c[illegible] an idea for a "space lattice" to be made out of pipe with "ball fittings", that would stand 4 feet high and be about 6 feet long. Constructed with the help of a plummer, Judd put together a rectangular parallelepiped with a quartet of pipes conjoining in the center of the work in the shape of a cross. ~~This work owes a formal debt to Frank Stella and Barnett Newman.~~

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With Judd there is no confusion between the anthropomorphic and the abstract. This makes for an increased consciousness of structure, which maintains a remote distance from the organic. The "unconscious" has no place in his art. His crystalline state of mind is far removed from the organic floods of "action painting". He translates his concepts into artifices of fact, without any illusionistic representations.

To Follow P. 3

The fact of entropy not only resides in the "paper and pencil structures" of the Second Law of Thermodynamics, but in all dynamic forms. Any form that begins in the heat of action is sure to end in a state of cool attenuation. The Newtonian notion of space as an absolute machine has never been completely refuted; it's ghost persists in the vagaries of Quantum Machanics and in the dead-pan art of Andy Warhol. It is valuable simply because it works, where all else fails. Nevertheless, entropy is alway at the end of this progressive rainbow. [illegible] hodge-podge full of spatial [illegible].

The action-painter fought a hot-war against entropy and lost. Judd is fighting a cold-war against entropy and is winning.

In Mineralogy, solidified masses of rock are called "concretioIn"Minaralogy Judd's work suggests chalkboard balled abstractions remains of Judd's works suggest what Judd has be brought into existence artifices of lime, clay, flint, sand-stone, iron, etc. His strata is cantilevered off walls, while his deposits rest on floors. Some of his surfaces have the look of rock that is billions of years old. One thinks of a petrified world without any trace of life. Fossils don't even exist in it. Only barren surfaces with the characteristics of shale and ice. Airless blocks of simulated granite without any reason for being, fill Judd's solid-state world. It is a world without creation.

The formal logic of crystallography, apart from any preconceived scientific content, relates to Judd's art in an abstract way. If we define an abstract crystal as a solid bounded by symmetrically grouped surfaces, which have definite relationships to a set of imaginary lines called axes, then we have a clue to the structure of Judd's "pink plexiglass box". Inside the box five wires are strung in a way that resembles very strongly the crystallographic idea of axes. Yet, Judd's axes don't correspond with any natural crystal. The entire box would collapse without the tension of the axes. The five axes polarize between two stainless steel sides. The inside surfaces of the steel sides are visable through the transparent plexiglass. Every surface is within full view, which makes the inside and outside equally important. Like many of Judd's works, the separate parts of the box are held together by tension and balance, both of which add to its static existance. This work was shown at the Daniel's Gallery's "Plastic Show" in the spring of 1965.

In one untitled work, one sees five galvanized iron verticals sprayed a blue contrapuntal to one brass horizontal. The brass horizontal is an "extruded" square tube with visable open ends, while the iron verticals are made of folded "star-spangled" sheet with invisable open ends. The entire work appears to be "draining" emptiness.

In a second "untitled" work, one sees four galvanized iron cubes contrapuntal to one aluminum horiztonal. Judd has made four "holes" disappear by surrounding them with four surfaces each, but only one surface remains intact on each cube, and that is on the two inner cubes. The two outer cubes have both full side-surfaces and full front-surfaces, while two inner cubes have full front-surfaces but not the full sides. This in turn results in three "gaps", and they serve as "missing edges". Each missing edge is sandwiched by two "Pittsburg"seams. Six seams make three gaps, but eight seams make three gaps plus two full sides, not to mention the aluminum tube which adds four "hidden" corners to the three gaps. gaps. In a Third "untitled" work, one sees five painted aluminum angles contrapuntal to one aluminum horizontal. The angles form four different gaps that exist between the regular intervals of the angles. Ups and downs come to an almost perfect equilibrium. Because Judd has "realized" the factual to such an extent, his works are fantastic.

The Search for the Elusive Edge

QUASI-SOLIDS

1. Donald Judd. Untitled box, 48 x 34 x 19½".

Judd's box indicates a radical concept of infinity, an infinity without commutative space. He has substituted in its place associative space, which brings his concept of infinity into an order of increasing hardness, not unlike geological formations. In geology there are imaginary lines called "axes" which run through solid-state crystals, but such lines represent real forces. In Judd's rosy plastic box this principle seems to be present. Inside the box five wires are strung in a way that resembles very strongly the crystallographic idea of "axes". Yet, Judd's "axes" don't correspond with any natural solid structure. Rather this indicates an exact but arbitrary relationship of abstract architectural substructures. Any physicist will tell you that, "Crystals are solids, and solids are crystals"; such ambiguity exists in Judd's progressive conception of orderliness. The "axes" set up tensions which may

be abstracted into an infinite ~~[illegible]~~ symmetry.

Sideview

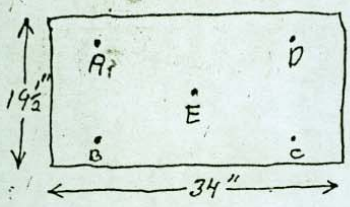

Fig. 1

Let us consider (Fig. 1) A, B, C, D, E, are the points where the wires connect. The six axes ~~[illegible]~~ cross the inside of the box and attach to the other side. This tension sets up a rotation of associative space in the shape of non-triangles. Each corner acts as a false vector, which in turn relates to four reflected points, A', B', C' D'. There is an aura around the box, this ~~[illegible]~~ is implied by the "glowing" red plastic. See dotted lines in (Fig. 2). Let E be prime axis, and let it connect with the non-existant corner vectorials.

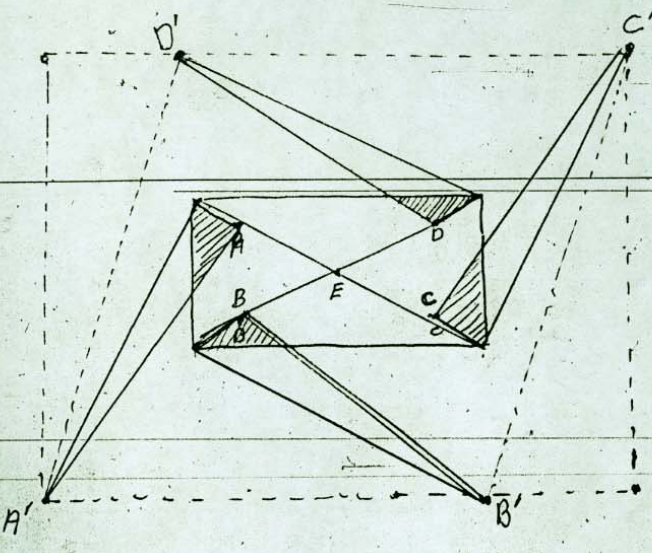

Fig. 2

Vertorials are ~~[illegible]~~ hidden triangles which exist in ~~[illegible]~~ solid rectangles. These associations have been gathered from a black and white photograph in (MAY, 65, Art International). I am using the photograph as a partial memory trace of the original, which I have seen but prefer to "remember". ~~[illegible]~~ observation.

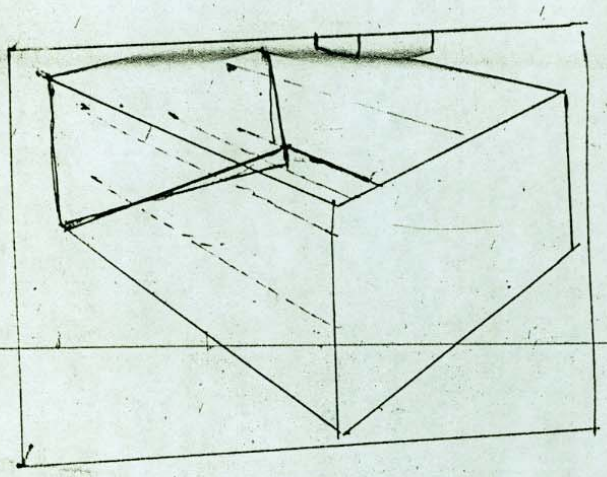

Fig. 3

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The "unconscious" has no place in Judd's art. His crystaline state of mind is far removed from the organic floods of "action painting." He translates his concepts into artifices of fact. Space in Judd's art seems to belong to an order of increasing hardness, not unkile geological formations. He has put space down in the form of deposits. Such deposits come from his mind rather than nature. Judd has brought space down into an abstract world of mineral forms. – Robert Smithson

A mathematical progression for one of Don Judd's works:
$1-\frac{1}{2}+\frac{1}{3}-\frac{1}{4}+\frac{1}{5}-\frac{1}{6}+\frac{1}{7}-\frac{1}{8}+\frac{1}{9}-\frac{1}{10}$

"William James (Some Problems of Philosophy) denies that fourteen minutes can pass because first it is necessary for seven to pass, and before seven, three and a half, before the three and a half, a minute and three-quarters, and so on until the end, the invisible end, through tenuous labyrinths of time."

Luis Borges: "Avatars of the Tortoise"

THE CRYSTAL LAND

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The first time I saw Don Judd's "pink-plexiglas box", it suggested a giant crystal from another planet. After talking to Judd, I found out we had a mutual interest in geology and mineralogy, so we decided to go rockhunting in New Jersey. Out of this excursion came ~~the~~ reflections which are reconstituted as ~~became the description of nature which follows~~ follows.

Near Paterson, Great Notch, and Upper Montclair are the mineral rich quarries of the First Watchung Mountain. Brian H. Mason, in his fascinating booklet, Trap Rock Minerals of New Jersey , provides much information about that locale. He speaks of the "Triassic sedimentary rocks of the Newark series", which are related to the Palisades. In these rocks one might find: "actinolite, albite, allanite, analcime, apatite, anhydrite, apophyllite, aurichalcite, axinite, azurite, babingtonite, bornite, barite calcite, chabazite, chalcocite, chalcopyrite, chlorite, chrysocolla, copper, covellite, cuprite, datolite, dolomite, epidote, galena, glauberite, goethite, gmelinite, greenockite, gypsum, hematite, heulandite, hornblende, laumontite, malachite, mesolite, natrolite, opal, orpiment, orthoclase, pectolite, prehnite, pumpellyite, pyrite, pyrolusite, quartz, scolecite, siderite, silver, sphalerite, sphene, stevensite, stilbite, stilpnomelane, talc, thaumasite, thomsonite, tourmaline, ulexite."

Together with my wife, Nancy, and Judd's wife, Julie, we set out to explore that geological locale.

After driving west on route 3 from Manhattan, we turned at the junction of route 46, and went south on Valley Road, till we got to the Upper Monclair quarry, "also known as Osborne and Marsellis quarry or McDowell's quarry". It is situated on Edgecliff Road in Upper Montclair , and it was worked from about 1890 to 1918. A lump of lava in the center of the quarry yields tiny quartz crystals.

For about an hour, Don and I chopped incessantly at the lump with hammer and chisel, while Nancy and Julie wandered aimlessly around the quarry picking up sticks, leaves, and odd stones. From the top of the quarry cliffs, one could see the New Jersey suburbs bordered by the New York City skyline.

The terrain is flat and loaded with "middle-income" housing developments with names like Royal Garden Estates, Rolling Knolls Farms, Valley View Acres, Split-level Manor, Babbling Brook Ranch-Estates, Colonial Vista Homes----on and on they go, forming tiny box-like arrangements. Most of the houses are painted white, but many are painted petal pink, frosted mint, buttercup, rose beige, fudge, antique green, Cape Cod brown, lilac, and so on. The highways criss-cross through the towns and become man-made geological networks of concrete. In fact, the entire landscape has a mineral presence about it. From the shiny chrome diners to glass windows of shopping centers, a sense of the crystalline prevails.

When we finished at the quarry, we went to Bond's Ice Cream Bar and had some AWFUL-AWFULS---"awful big--awful good....its the drink you eat with a spoon". We talked about the little crystal cavities we had found, and looked at The Field Book of Common Rocks and Minerals by Frederic Brewster Loomis, as we ate? drank? our AWFUL-AWFULS. While scanning the book, I noticed that ice is a crystal:

"Ice
H2O
water
specific gravity--.92
colorless to white
luster adamantine

transparent on thin edges

"Beneath the surface the hexagonal crystals grow downward into the water, parallel to each other, making a fibrous structure, which is very apparent when ice is 'rotten'...."

Nancy went to the jukebox and played, The Under Assistant West Coast Promotion Man by the Rolling Stones. "...Well, I'm waitin' at the bus stop in downtown L.A...."

After that, we walked to the car through the charming Tudoroid town of Upper Montclair, and headed for the Great Notch Quarry. I turned on the car radio. "...count-down survey...chew your little troubles away...high ho-hey hey... makes the job go faster...sound-breaking hit...there's no time... try to see it my way...former sure-shot...good guy Goldie... don't cook tonight...cook Chicken Delight...77 WABC.../ll American... check out traffic...moderate...please drive carefully...Lucky 7 Sale...37¢...47¢...value event that sets the standard...more of everything...can handle 2000 cars... Paterson sale days...25 hundred year old brewmaster...cool it...The Byrds...Turn, Turn, Turn."

My eyes glanced over the dashboard, it became a complex of chrome fixed into an embankment of steel. A glass disc covered the clock. The speedometer was broken. Cigarette butts were packed into the ash-tray. Faint reflections slid over the windshield. Out of sight in the glove compartment was a silver flash-light, and an Esso map of Vermont. Under the radio dial (~~55-60-65-~~ 55-7-9-11-14-16 ~~80-90-100-110-120-130-140-150-160~~ plastic ~~chrome~~) was a row of five buttons in the shape of cantilevered cubes, which I pressed

from time to time. The rear-view mirror dislocated the road behind us.* While listening to the radio, some of us read the Sunday newspapers. Julie turned the pages of the Trib. Don turned the pages of the Times. The pages made slight noises as they turned; each sheet folded over their laps forming temporary geographies of paper. A valley pf print or a ridge of photographs would come and go in an instant.

We arrived at the Great Notch Quarry, which is situated "about 300 yards southwest of the Great Notch station of the Erie Railroad". The quarry resembled the moon. A gray factory in the midst of it all, looked like architecture designed by Robert Morris. A big sign on one of the buildings said, "THIS IS A HARD HAT AREA". After parking the car, we started climbing over the piles. Before long, we ran into a "rock-hound", who came on, I thought, like "Mr. Wizard", and who gave us all kinds of rock-hound type information in ~~a very~~ AN authoritative manner. We got a run-down on all the quarries that were closed to the public, as well as those that were open. The one we ~~happened to~~ were in was closed.

The walls of the quarry did look dangerous. Cracked, broken, shattered; the walls threatened to come crashing down. Fragmentation, corrosion, decomposition, disintegration, rock creep, debris slides, mud flow, avalanche ~~was~~ were everywhere in evidence. The gray sky seemed to swallow up the heaps around us. Fractures and faults spilled forth sediment, crushed conglomerates, eroded debris, and sandstone. It was an arid region, bleached and dry. An infinity of surfaces spread in every direction. A chaos of cracks surrounded us.

On the top of a promontory stood a motionless rock-drill against the blank, which was the sky. High-tension towers transported electric cable over the quarry. Dismantled parts of steam shovels, tread machines, and trucks were lined up in random groups. Such objects interrupted the depositions of waste that formed the general condition of the place. What vegetation there was seemed partially demolished. Newly made boulders eclipsed parts of a wire and pipe fence. Railroad tracks passed by the quarry, the ties formed a redundant sequence of modules, while the steel tracks projected the modules into an imperfect vanishing point.

We sorted our meager collection of specimens, and started out of the quarry. On the way, Don found an interesting lump of hard mud. He chopped at it a few times with his pick hammer and added a piece to his collection.

On the way back to Manhattan, we drove through the "Jersey Meadows", or more accurately the Jersey Swamps. The meadows, or swamps, would make a good location for a movie about life on Mars. It even has a network of canals that are choked by acres of tall reeds. Radio towers are scattered throughout this bleak place. Drive-ins, motels, and gas stations exist along the highway, and behind them are smoldering garbage dumps. Towns like Secaucus, with its famous pig farms, fill the air with their smells. South, toward Newark and Bayonne, the smoke stacks of heavy industry add to the general air pollution. Such thick smoke, like the probable atmosphere on another planet, seems to conceal squadrons of flying saucers or UFOs.

As we drove through the Lincoln Tunnel, we talked about going on another trip to Franklin Furnace: there one might find minerals

that glow under ultra-violet light or "black-light".

The countless number of cream-colored square tiles on the walls of the tunnel sped by, until a sign announcing the division between New Jersey and New York broke the tiles' [illegible]c order.

[illegible]