A DRAMATIC EXAMPLE OF THE IMAGINATIVE USE OF SAW-TEXTURED REDWOOD

Though work was still in progress when these photographs were taken, it is easy to see why saw-textured redwood was used so extensively throughout this Case Study House. By taking advantage of redwood’s rich color tones and interesting grain patterns, the architect has not only designed a house that is highly functional but one that also conveys a delightful feeling of warmth and serenity.

All the wonderful warmth of wood is best expressed in redwood.

CALIFORNIA REDWOOD ASSOCIATION
576 SACRAMENTO STREET • SAN FRANCISCO
CRA-CERTIFIED KILN DRIED REDWOOD
REDWOOD PANELING in the bathroom (note concrete form for sunken tub) extends into free-standing redwood wall in the adjacent sun-bathing patio.

SAW-TEXTURED, T & G REDWOOD vertical boarding was specified for baffles and exterior siding. Drawing below shows how decorative pools will become an unusual feature of the entranceway.

INTERIOR PANELING was left unfinished so that nothing would detract from the decorative grain patterns and subtle color tones of the saw-textured redwood. Exterior siding was treated with a clear water-repellent.

Architects:
Killingsworth, Brady & Smith

REDWOOD BAFFLES, shielding the house from the street and neighbors, have been made a distinctive design feature. Throughout the house, glass and redwood meet with a minimum of distracting metalwork.

AN INTERESTING DETAIL are the outlets, in several rooms, leading from the master TV antenna system.
I promised the last article, after writing about a concert of music by Lou Harrison, that I would explain why he orchestrates the sound of such unexpected instruments as a set of coffee cans or a washtub to accompany a violin. In other words, why instrumental means that would have seemed nonsensical to Wagner are now acceptable, whereas Wagner’s operatic stories seem nonsensical to us.

Since then I have heard the concert I am discussing and I have heard a series of programs of Oriental music at the University of California, Los Angeles. In retrospect of so much enlarging experience, I feel that I must widen the discussion, employing as usual my oblique approach.

There are two manners of approaching the sound idiom, to make music with it or to make it vivid for what it is as sound. Both are valid methods, but the validity in each depends on the consequence; they can of course be combined or, somewhat differently, mixed.

Some composers wish to have their music both ways. This was the passion of the 19th century composer, to remain within the legalities of form and harmony, yet with these to express, to represent, to give expression to, and therefore to convey as feeling in a medium composed of feeling the thought expressed, the scene or image represented, the emotion exhibited by the situation itself at the moment, however abstract (e.g. “fate knocking at the door”), and the entire composite wrapped up for immediate consumption, like a tamale. We have no reason to believe that Beethoven, who has been burdened by the imposition of this creative ability and glory, went nearly so far as Berlioz in desiring the praises he still receives from connoisseurs of second-hand emotions.

Now all this exploration of new dimensions of expressiveness in sound and noise is reopening the fundamental questions of music, asking again what music is; and that is a very fortunate occurrence, because the answer had seemed all too well settled: that it should be sound harmoniously wrapped up like a tamale, preferably hot. And upon this conception was imposed the distinctly different criterion, that music should be a work of aural architecture, a construction, cool, edible, and dispassionate, like a wedding cake.

The younger European composers continue these two contradictory presumptions. If I seem irreverent, let me not be misunderstood. The conflict of criteria has been perpetually a source of great art. When the conflict is resolved, as in some Asiatic musics, the great art may remain, as an artifact, but the source of art driving.

The trouble is, that the conflict of these two criteria, passion and construction, has been so thoroughly worked in European music, that to revive it or continue it, in a new medium, imports into the new medium too many solutions, already used up by the medium within which they originated, and some ambitions which the originating medium has shown to be impractical.

Thus there is, in the work of these younger European composers, a desire to continue making “music,” as music has been understood within the tradition the composer desires to break away from, and an ambition which runs along the same old rails towards the ideal of the Gesamtkunstwerk, that mighty mixture of all media that has lately come down to what Aldous Huxley called, prophetically, the ‘smellies.’

To start over, in a fresh medium of sound, relieved of preconceptions, is to find ourselves in the esthetic-philosophic dilemma of John Cage. For 25 years he has been gnawing away at his dilemma, bringing forth projects, some adequate, some projective. One work in the album of his 25-Year Retrospective Concertos is a Quietet for tom-toms. The rhythmic construction is derived from practices of Asiatic music, without imitating any one such practice. . . . “The hypnotic-muted effect depends on two factors—on playing center and edge (of the drums) with the fingers, less frequently with wire brush and tympani stick, and on the rhythmic length of the structure, the parts of which are expressed sometimes by sound and sometimes by silence.”

Of course the means in themselves are not hypnotic; and, unfortunately, the rhythmic lengths and parts do not impose themselves hypnotically on this listener. I think the piece a failure.

But when listening to Cage’s Aria and Fontana Mix I realized that the Quartet for tom-toms had at last found a medium; here the rules worked. I don’t know whether they are the same rules, probably not, but they have the same purpose, forgetting the “hypnotic” business. Here are noises which present themselves in shape as noises, much more interesting to the ear than the wave-like electronic sequences of Maderna. And these noises emphatically present themselves as individuals, each clothed in its own character, the silences between them become vital and vivid as a street, in a new city, as emotionally present and inexplicable as a dream. This was the Fontana Mix, and what in the abstract character of noise on tape became vivid—enough to stir up audience response—was doubly vitalized by the live voice, singing, speaking, sighing, barking like a dog. As if on that new street, in that new interesting city, one walked into an incident, a crowd listening to a speaker, a lyrical cascade of voices from a stall. This isn’t music, and I don’t intend my suggestions to be similés. As vital for the performance as the voice of the performer is the audience response, laughing, sporadic boos, impertinent imitations of the sounds. Cathy Berio has performed the Aria and Mix a number of times, and only once, she told me, has she been embarrassed; that was before an afternoon subscription audience in Milan, when no one booed, no one laughed, no one imitated any of the sounds. After that I was ashamed that I had listened in silence.

By contrast, the next work, Theme (Homage to Joyce), came close to being a genuine work of music, because the entire tape had been put together of electronic permutations of the sound of Cathy Berio’s voice, reading on the onomatopoeia of the English language. It seems to me bravura, or bluff.

During his lecture at San Fernando State College, Luciano Berio played us several progressive compositions on this text, for one, two, and three voices respectively in English, French, and Italian, exhibiting the many possibilities of this method. All were impressive, but for my taste Cathy Berio’s reading of Joyce’s original text is in every way more beautiful, expressive, and in particular more subtly musical than any of the electronic variants. The composite is, however, a valid means of sound composition, achieved perhaps more successfully by Stockhausen in his Children’s Voices. Here again I must be cautious, because Berio assures me that his electronic mixture is technically more elaborate than Stockhausen’s, and for lack of experience I give him the benefit of my doubt. Such a vocal composition, superimposed upon an electronic composition, supporting the live voices of speakers or actors and dramatic sounds, might lead to the great opera of sound Luciano Berio has in mind as the goal of his adventure. I still call it Gesamtkunstwerk and old-fashioned.

The final experiment in this sort brought Leonard Stein to the piano to accompany Cathy Berio in a piece called Voix de Femme by Sylvano Bussotti, from a larger work entitled Pieces de Chaires II. Bussotti is a very young Italian composer who seems to have borrowed from John Cage and from his immediate European precursors in a more general way than any of the electronic variants. The composite is, however, a valid means of sound composition, achieved perhaps more successfully by Stockhausen in his Children’s Voices. Here again I must be cautious, because Berio assures me that his electronic mixture is technically more elaborate than Stockhausen’s, and for lack of experience I give him the benefit of my doubt. Such a vocal composition, superimposed upon an electronic composition, supporting the live voices of speakers or actors and dramatic sounds, might lead to the great opera of sound Luciano Berio has in mind as the goal of his adventure. I still call it Gesamtkunstwerk and old-fashioned.
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evolved as a unity rather than a diversity of styles from the Grecian period to the present. Influences of folk music have given it at various times individual patches of exoticism, and the constant apparent dichotomies between learned and popular art, between conservatism and whatever new music was then current, have imparted a ballistic twist to keep Western music on its evolutionary course. At no point during this long, slow-changing development has any part of the mainstream of European music, in any part of Europe, broken off from the remainder to become an individual, exclusive, esthetic manifestation. During the entire period European folk music has remained regional and in every region subservient to the common musical speech of Europe.

In Asia the growth and evolution of music has proceeded quite the contrary manner. Though stylistic evolution and borrowing have occurred, as when Japan set up its own culture with borrowings from China, Korea, and the distant outposts of India during the Heian period, Asiatic music has been regional and exclusive to a degree that we can scarcely imagine, divided between one country and another, divided among separate portions of one country, between city and village, between settled and nomadic peoples, split apart even among classes, and by exclusive rights of priesthood and privileges of rank.

I believe one can say truly that from earliest preserved history until the present day there has been no place in Asia where a scholar could study Asiatic musical cultures, or the instruments, on the systems of notation, on the ethnic or hereditary forms of music, or its numerous manners of embellishment, or indeed anything else about more than a single manifestation of it in one place at one time. The styles have been exclusive, often private, and more often than not unwritten. The instruments have achieved no generalized forms, like the European orchestra or keyboard, to which the musical art of various groups could be adapted. The manners of playing have been generally transmitted by memory or by oral instruction. In many places even the basic melodies have survived only by mnemonic devices.

I make these distinctions to emphasize the fact that for the first time in the history of Asiatic music there is now a single school where a student of Asiatic musical culture can begin to study in one place more than one part of the whole vast pattern of esthetic differences. Here for the first time it will be possible to discover, document and put into practice not only the particularities but the less-known generalities which govern the musical arts of Asia. And only in this place, at the present time, can an Asiatic musician begin to learn about the other musics of his continent.

The one place is not in Asia; it is in America, at the University of California, Los Angeles. And though the credit goes in part to several individual students, the honor of having organized and established in practising existence this unprecedented school of Asiatic musical cultures belongs in large part to Mantle Hood.

This year, under the general direction of Mantle Hood, the Department of Music, the Committee on Fine Arts and the Committee on Public Lectures within the University Extension Division, the Library, the Grunwald Graphic Arts Foundation, the Departments of Art, Anthropology and Sociology, Education, English, Folklore, Home Economics, Oriental Languages, Philosophy, Political Science, and Theatre Arts, of the University of California, assisted by the Ford and Rockefeller Foundations, presented the first Festival of Oriental Music and the Related Arts. The programs, focussing upon music but expressing in some degree the interests of each of the departments, began on Sunday, May 8, and continued almost daily until Sunday, May 22, for a total of 22 lectures and performances.

Here I consult the dictionary, to distinguish between Oriental and Asiatic. The continent is Asia. Asiatic is "of or pertaining to the people of Asia." Oriental is "pertaining to, situated in, or characteristic of the Orient; Eastern; especially Asiatic." Biographically, "designating a realm or region including Asia south of the Himalayas, the Philippine Islands, and part of the Indo-Malayan Archipelago."

A FESTIVAL OF ORIENTAL MUSIC—PART I

Though regional differences of marked character have divided the areas of Asiatic musical culture, and national musics have risen and faded during the last century, European musical culture has evolved as a unity rather than a diversity of styles from the Grecian period to the present. Influences of folk music have given it at various times individual patches of exoticism, and the constant apparent dichotomies between learned and popular art, between conservatism and whatever new music was then current, have imparted a ballistic twist to keep Western music on its evolutionary course. At no point during this long, slow-changing development has any part of the mainstream of European music, in any part of Europe, broken off from the remainder to become an individual, exclusive, esthetic manifestation. During the entire period European folk music has remained regional and in every region subservient to the common musical speech of Europe.

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tured of Asia that precedes the long-standing Mohammedan domi-
nation, the Persian. Neither word will quite suffice for our pur-
poses, I shall use "Asiatic" to distinguish the entire continental
area from the larger group of continents now dominated by
European music, and "Oriental" to distinguish the music covered
by this Festival. In the same way I shall use "European"
to describe the culture and "the West" to distinguish the area
of European musical domination.

Until the present century the West has had only a very sketchy
notion of Asiatic history and culture. The chauvinistic notion of
Asia that precedes the long-standing Mohammedan domination,
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culture and "the West" to distinguish the area of European
musical domination.

The Festival program filled six pages in the handsome booklet
of some 75 pages that was published with it. The booklet con-
tains 10 articles, on Balinese and Javanese, Japanese, Indian
and especially South Indian, and Persian music, on Japanese
costumes, and Bertolt Brecht's Chinese play The Good Woman
of Setzuan. The lectures of the Festival covered folk-tale, art,
films, textiles, costume, poetry, anthropology, cultural exchange,
theatre. The musical programs included Japanese Court Music
(Gagaku), Persian music, Javanese and Balinese music (Gamelan),
Indian music, and Chinese music, with some dancing. The
performers included one trained musician apiece from Persia,
India, China, and Indonesia; three of these musicians assisted
in programs of music other than their own. Several of the West-
ern performers had been trained during recent years in Oriental
music, on American traveling fellowships for study, among them
Mantle Hood in Indonesian music, Hobert Brown in South
Indian music, and William Malin in the literature of Japanese
Naga-uta. An important member of the group, Robert Garfias,
is now studying in Japan. Among the incidental performers, most
of them students at the University, plus a few faculty members,
were visiting students from Persia, India, Holland, and Greece. The leading performers, without exception, took part in more than one type of music and got around acceptably on several instruments. Only one performer, the visiting Chinese virtuoso of the pipa and chhin, Lui Tsun-Yuen, was not a member of the University, and it is hoped that he may become so. All the group performances, except the Persian, were directed by Westerners. The quality of these performances was less remarkable, in the circumstances, than the fact that they occurred.

I was able to attend four concerts: the Chinese recital, the Gagaku and the two Gamelan concerts. I should like to have been present at the Persian and Indian programs and at several of the lectures. Twenty-two events in fourteen days, even when a couple of the programs are repeated, seems to me asking too much of players and audience. I believe that a series of events of this importance should not be fired off like a string of crackers, even though doing so may draw greater attention and perhaps larger audiences. We show in our society a precarious disregard for the seriousness of matters we deem serious, an insensitive vulgarity in reducing all meanings to whatever can be grasped at one sitting by a relatively unprepared audience. Attention to an unwonted habit of art needs to be followed by rest and consideration, if the effect is to be more than a good show. Asiatic cultures have learned to make much, each in its own area, of a relatively little variety. We compress several distinct examples of a culture into one performance and a half-dozen distinct cultures into a two-week Festival. The Western restless ambition to be noticed causes us to detonate several large experiences, that should be received separately, into no more than a single experience and then play up the resulting values in a falsifying picture-magazine display. We might learn instead from the peoples whose long traditions we are examining that there is more to these traditional cultures than our perverse scholarly curiosity can swallow at one gulp.

It had seemed to me that somewhere in the booklet the term "ethnic music" occurred, but at a quick check I cannot find it, and I am glad. A year ago a charming professor from Tokyo University was here at UCLA teaching "ethnic music." I introduced him to Igor Stravinsky, and scarcely pausing to draw breath he asked Mr. Stravinsky whether he was not interested in "ethnic music." Mr. Stravinsky said he was not and went on to speak of his approaching visit to Japan. The professor afterwards complained to me that Mr. Stravinsky should have been interested, because he has so often drawn on "ethnic music" for his compositions. I replied that this is quite a false appraisal of Stravinsky's music, which has, despite appearances, almost no folk-music derivations.

The word "ethnic," in its Greek and ecclesiastical usages, connotes those who are outside the chosen culture and therefore culturally less. The dictionary gives as the first meaning: "Neither Jewish nor Christian, pagan." And as the second meaning: "Of, pertaining to, or designating races or groups of races discriminated on the basis of common traits, customs, etc." Since music needs to be discriminated quite as sharply within the races as among them, I think we shall do better to avoid the implied suggestion of a greater race studying the curious habits of lesser races. I am happy that the makers of the Festival have avoided this implied misunderstanding.

Mr. Lui Tsun-Yuen, for example, is a virtuoso of the pipa, a four-stringed Chinese lute with a history and literature of several hundred years, going back, if I understand Mr. Lui correctly, not so far as the European lute. Anyone who listened to Mr. Lui would appreciate, without explanation, that there is nothing possible to be played on the pipa that Mr. Lui cannot play with a rare excellence. The figurations obtained by the finger-movements of his plucking hand are as interesting to watch as listen to. But, as often happens, the virtuosity of his playing very nearly effaces the stylistic distinctions among the several pieces from different periods that he performed. The whole effect of this music resembles that of Elizabethan lute music, although the large European lute of 16 to 22 strings is a far more complex instrument. Possibly for this reason the revival of European lute-playing has not achieved such virtuosic competency, and its styles, though often improperly rendered, are more easily distinguished in performance.
Scientific popularization has a number of functions and they are of considerable significance. It continues, corrects and fills the gaps of school education, which inevitably lags behind the march of progress. It stimulates vocations for research and is thus of direct benefit to creative science, which it also serves by keeping the public at large informed of scientific achievements and power; it thus provides science with a hearing and with the support of public opinion. It creates a link between specialists working in different disciplines, since it is popularization which ensures that the physicist knows something of what is happening in biology, and that the biologist has some idea of what is going on in physics. It keeps—or could keep—politicians informed, and nowadays politicians, more than ever, need to keep up with scientific developments.

But however important these various functions, may be, they do not take into account the true and specific aim of popularization which is purely and simply to introduce the greatest number of people to the dignity of knowledge; to ensure that the great mass of the people should receive something of that which is the glory of the human mind and that they should not be kept apart from the great adventure of mankind—to bring man closer to man by trying to reduce the terrible invisible gulf of ignorance; to struggle against mental starvation and the resulting under-development by providing everyone with a minimum ration of spiritual calories.

In a word, the ideal of the popularization of science—and this is where its moral value lies—is to develop and assist a community of thought. It is the reverse of Renan’s aristocratic concept of a small group of “informed” people acting as guardians to an ignorant multitude. It is a work of “decalibanization,” if one dares to use the word, or, if you prefer, of intellectual “disimpoverishment” and, hence, of liberation.

The more important its mission appears to us, the more exacting we must be with regard to the way in which it is carried out. We must insist first of all upon strict impartiality, unfailing objectiveness and absolute philosophic honesty. There is no question of using the authority of science to indoctrinate minds or force them to conform to a pattern, to implant in them any cramping or constricting dogmas; but, as the philosopher Guyau put it, they must be “converted to undeniable truths,” so that, with the raw materials freely provided, every man may build his own small universe.

Today any distinction between the man of science and the man in the street is unacceptable, as is segregation based on inequality of knowledge. Whether we like it or not, the laboratory now opens right on to the street. Science not only affects us at every moment of our daily lives, it hunts and pursues us. Haven’t we all been turned into involuntary guinea-pigs, ever since atomic fission, without asking our opinion, began to plant harmful particles in our bones?

This obligation to endure gives us the right to knowledge.

The time is clearly coming when the man in the street will have his say in all the great social, national, international and moral issues which have been raised recently by certain applications of science. And perhaps the scientist himself, weary of bearing on his own a too heavy burden of responsibility, will be happy to find sympathy and support in public understanding.

All men have the right to receive the truth, and the truth has the right to reach all men.

JEAN ROSTAND — UNESCO
This large project was designed to fulfill two basic requirements: a business need for increased and more efficient office space, and to provide a sound revenue-producing investment. The architects' solution provides a center with a unique integration between the office building and the hotel facilities, with the hotel linked by a bridge to convention facilities in the block structure under the office tower. Foundations for a projected third tower have also been provided.

Fundamental principles in the design solution were flexibility and provision for low-maintenance costs, parking, expansion, and an attractive environment. A full city block of 2½ acres in downtown Dallas was selected as the site. A ¾ acre terrazzo paved and planted plaza occupies the middle of the block, separating the principal structures. Pools and sculptures in the landscaped areas provide a pleasant respite from the crowded city sidewalks and streets. The ground floors of the office building and hotel are devoted primarily to landscaping and lobbies, supplemented by shopping space. At the ground floor also is located a motor entrance to the parking garage with convenient access to the elevator lobby. The second floor is a common floor for both office building and hotel and provides space for the facilities which may be used by both office personnel and hotel guests. These include meeting rooms and conference rooms and a 2500-seat grand ballroom for conventions, exhibits and lectures.

The typical floor of the office tower is designed with an off-center interior core to provide maximum contiguous space for the owner's own operation and maximum rentability to major tenants. Recessed fluorescent fixtures, arranged in a removable ceiling, provide flexibility for rearrangement of partitions.

Ramps to the underground parking are reached from an automobile concourse under the office tower, and lead to a three-level parking garage with a capacity of something over 1000 cars. An off-street loading dock will make possible a transfer of goods direct to the floor designation without interfering with street traffic.

The exterior walls are reinforced concrete; the curtain walls, prefabricated panels. Glass mosaic on precast concrete spandrels was selected after extensive tests showed that it was not subject to weathering and is almost entirely self cleaning. The exterior panels are designed with contrasting blue-green tiles in the office tower and blue and gray tiles in the hotel. Windows and exterior mullions in the building are anodized aluminum in contrasting dark gray and natural aluminum.
SCULPTURAL SCREEN BY BERNARD ROSENTHAL.

PHOTOGRAPHS BY ALEXANDRE GEORGES
JOHN ROBERTS
The Visual Arts Today by Gyorgy Kepes

Vision is above all a cognitive act. The focusing of the welter of optical signals coming from outside to make perceptual images is a basic form of comprehending. We use vision to explore the world, to make ourselves at home in it, and to change it. Even without instruments to aid us, our eyes can establish relations with things as far away as the fixed stars. In our closer environment we depend upon vision to measure and locate things, to identify danger or opportunity.

No less important than the outer vision with which we explore our environment is the inner vision we use to explore ourselves and to find significance and meaning. Our inner world is peopled with sense images—visual, auditory, kinesthetic, tactual—formed from the traces in our systems left by our sensory traffic with the environment. These images inside our heads we use to focus experience, code our sensations, crystallize feelings, build our dreams, and set our goals. Without these images our experience would not cohere and our memories would be disconnected and meaningless.

The created visual image, the visible forms we make with our hands and eyes together, link the outer vision that explores the external world with the inner vision that shapes our felt experience into symbols. These created pictures—graphic images, sculptured forms—are basic to communication, expanding an individual experience into one that is shared. They provide a foundation for the arts and sciences and make social and intellectual growth possible.

The artistic image—the work of visual art—is the created image in its highest form, a significant message delivered simultaneously to our senses, our feelings, and our minds. At every stage of history men have looked for images that would keep them oriented in the world, that would tell them what the world was like, how sweet and rich it was, how good or bad, and what was their own place in it. Artistic images have served to bring their outer and inner worlds into correspondence, providing them with means for inducing inner pictures of the outer environment—pictures shaped with sympathy, with the joys and sorrows, fears and hopes in the heart of man. And above all the work of art has sustained man with visions of a felt order. It has returned understanding to the indispensable eye, the foundation of our thought and feeling, the core of experience.

The common denominator of artistic expression has been the ordering of a vision into a consistent, complete form. The difference between a mere expression, however intense and revealing, and an artistic image of that expression lies in the structure of the form. This structure is specific. The colors, lines, and shapes corresponding to our sense impressions are organized into a balance, a harmony or rhythm that is in an analogous correspondence with feelings, and these in turn are analogous of thoughts and ideas. An artistic image, therefore, is more than a pleasant tickle of the senses and more than a graph of emotions. It has meaning in depth, and at each level there is a corresponding level of human response to the world. In this way, an artistic form is a symbolic form grasped directly by the senses but reaching beyond them and connecting all the strata of our inner world of sense, feeling, and thought. The intensity of the sensory pattern strengthens the emotional and intellectual pattern; conversely, our intellect illuminates such a sensory pattern, investing it with symbolic power. This essential unity of primary sense experience and intellectual evaluation makes the artistic form unique in human experience and therefore in human culture. Our closest human experience is love, where again sensation, feeling, and idea compose a living unity.

The essential unity of first-hand percept and intellectual concept makes artistic images different from scientific cognition or simple animal response to situations. To repeat, it is the unity of the sensory, emotional, and rational that can make the orderly forms of artistic images unique contributions to human culture. The meaning of the artistic experience is impoverished if any one of these areas of experience takes undue preponderance.

Images deriving solely from a rational assessment of the external world, without passion of the eyes, are only topographical records. Images of emotional responses without real roots in the environment are isolated graphs of a person's inner workings: they do not yield symbolic form. And the most beautiful combinations of color and shape, the most exquisitely measured proportions of line, area, and volume, leave use where they find us if they have not grown out of rational and emotional participation in the total environment. Each of these visions is a fragment only.

The visual images of the twentieth century provide a broad spectrum of fragmented artistic vision. If I may be allowed to speak in a subjective vein, I now see my own evolution as a painter as a succession of partial insights. As a young painter, I was interested in nothing but an exploration of the sensory variety and riches of the visible world, its wealth of color, texture, and light. Soon, however, I had to face my
own feelings and emotions. I took to the expressive reporting of my emotional ups and downs, and made expressive gestures in which the image lost all coherence. In consequence, the need of bringing my feelings and responses into order impressed me, and my conscious goals became discipline and precision. I received immense satisfaction from the very notion of building forms that could live independently because of their inner consistency, their spatial clarity, and balance of color. I felt like a creator—shaping, ordering, making forms that came alive.

My next stand was brought about by environmental change: the world came to exhibit primary attributes of mass poverty, depression, and social unrest. I lost confidence in the validity of creating such forms in isolation from the main stream of events, and in my subsequent phase I interested myself in the impact of man-made images on people, in a visual communication of ideas to make life better. Such a communication had to be on a broad basis, I felt, it had to become mass communication. Painting now seemed an anemic medium, and in my search for idioms with breadth and power I turned toward film as the most advanced, dynamic, and accordingly potent social form of visual communication.

But again, the enormous expansion of human conflict in World War II and its consequences made so many ideas seem shallow that I was impelled, like many others, to search for values rather than tools. The social horizon, with its immense and seemingly insoluble problems, did not seem to contain the key to those values. The scientific revolution, with its menaces, benefactions, and promises, did seem to open an emotional window. Basically, I felt, the world newly visible by science contained the essential symbols for our reconstruction of physical surroundings and for the restructuring of the world of sense, feeling, and thought within us. I was drawn to the converging contributions made by art and science, and to the distillation of the images common to our expanding inner and outer worlds.

I now recognize that the metamorphoses in my approaches to art are a history of changing assumptions. Whatever concealed motivation patterned the change, new artistic goals arrived without conscious and systematic decision. These goals arose through my own encounter with concrete realities. Each convincing new image became a kind of deduction from a set of postulates of knowledge and value. Like these artistic images, all purposive human acts are based on such sets of postulates. What we see or feel, how we think or act, depends upon the basic assumptions we hold, sometimes unconsciously. The world is real to us only on the scale of our inner model of space, purpose, and values. To see more than this we have to exchange elementary for advanced assumptions—as we all do, inescapably, in the course of growing up.

Artists, too, see what they see by means of assumptions. Their vision, if it is sensitive and true, becomes ours also: they teach us how to see and how to enjoy. We rely upon them to help us make our perceptual grasp of the world functional, meaningful, satisfying, and communicable—even though there is often a considerable time lag between the artist's grasp and ours, for the artist's high degree of sensitivity tends to make him something of a prophet. We sometimes gain insight into our own attitudes more quickly by questioning art than by questioning ourselves. The attitudes are common—and, in the images of art, highly concentrated. Further insight is furnished by testing the postulates of artists against the conclusions of science, first with respect to the energies and processes of the physical world, second with respect to the energies and processes of the individual and society.

An essential theme of this issue is the contemporary relation between the visual arts on the one hand and science on the other. Because our modern specialization often separates artist and scientist, neither has been always fully aware of the profundity of the other's work. Scientists and artists both reach beyond their individual quest for meaning to discover basic natural pattern and basic natural process. Yet there is a tendency for the scientist to expect the artist to interpret literally, like some unthinking sensitive device, and for the artist to expect the scientist to think coldly and mechanistically, like some unfeeling technical appliance. To a reader with an essentially scientific bent it should be insisted that the creation of a visual image in the arts is not the instinctive act of certain individuals but rather a fusion of their deepest inner workings with the messages of society, including information from the realm of knowledge and rational thought. Like the scientist, the artist uses the learning of his times in a basic way. And, again like the scientist, the artist profoundly affects our world outlook.

A fundamental transformation of our world outlook is inhumanly taking place on every possible level of thinking and feeling. Less indubitably, perhaps, but demonstrably, the insight brought us by art is a partner to scientific understanding in this process of transformation. The bold generalizations of scientists, bringing formerly unconceived phenomena into larger, more general schemes impressive in their cohesion, are redefining the expanding world and keeping it accessible to our inner model. Among the echoes and parallels in other human endeavors are the brave efforts of many artists of this century to find an emotional footing upon this bewildering new world. As a sense, it has been the dove, evicting us from the smaller, friendlier world in which we once moved with a confidence born of familiarity, and plunging us into a bigger, alien world where our accustomed sensibilities are forced to cope with a formidable new scale of events.

The responsibility is being laid on us of coming to a new emotional term with the accelerated scientific discovery and technical development, has expanded so explosively in so many directions that we seem unable to grasp its dimensions or assert authority over its dynamics. The wild growth of our cities—in physical mass, in population, in complexity of human relationships—makes them seem enormous with an independent life beyond human control. We have disrupted the atom and speared the moon, but, as we all know, there is as much apprehension over the unknown as there is joy in new vistas of what life can be. We try to cope with the exploded scale of things, whatever the standard that would help us to evaluate them. For this we need more than a rational grasp of nature. The extended world revealed by science and the technical world of man's own making both challenge our senses, the disposition of our activities and movements in conformity with their rhythms, the discovery of their potentialities for a richer, more orderly, more human life. The sensed, the emotional, are of vital

(Continued on page 29)
A BOWLING CENTER BY HAWTHORNE AND SCHMIEDEKE, ARCHITECTS
The project calls for the housing of forty bowling lanes with two locker rooms, storage, a cocktail lounge, dining room, kitchen and parking space to accommodate at least 240 cars.

A two-inch thick undulating roof system clear spans 110 feet over automation, alleys, spectators and concourse to rest on the ridges of the same construction over the services spaces. 1” x 7” steel plates form the ridges and valleys of the folds and are laced together with 2” x 2” steel T’s. Two-inch thick triangular wood fiber panels infill and laterally brace the lacing webs of the system. Walls and screens are of modular masonry panels that terminate at a height of 6’-8” with wood fiber panel and glass partitions extending to the valleys of the roof system above. The undulating side walls are of thin insulated cement asbestos panels that permit easy future expansion. The building together with landscaped courts and encircling walks is positioned on a raised podium five feet above the parking lot to prevent inundation from spring flash floods and prevent its low silhouette from being hidden behind a field of automobiles from the raised super-highway on the west.
The basic objective of the community of Daly City, California, was to construct an elementary school which could be utilized for educational activities and also be incorporated into the total recreational program since it is an integral part of the city park. The intent was to create small clusters of small classroom units around intimate courts and then to relate the four-room clusters around larger courts. The larger courts are to be utilized for special activities such as entrance courts, lunch terrace and play court, and special gardening and service court. A multi-use unit was placed in a central position so that it would serve as a common meeting area, central to all facilities, and could be used both for indoor and outdoor activities. The arrangement of facilities on this basis was further motivated by a desire to fragment the program into a number of small courts and units, thus creating the impression of a small village. Provisions have been made for protecting the courts of the school building by the introduction of wind and vandalism screens to protect and define the outer spaces.

The kindergarten is located at the main entrance with a playground entirely separate from the other play areas.

Since the project is to be constructed in low-lands inclined to be marshy, a special compacted engineered earth fill has been constructed in the form of a raised circular mound. The raised circular mound will be appropriately landscaped and will also be defined with a railing at its edge in order to protect the school building from the adjoining play area. The adjoining park areas have been developed as part of a master plan of Daly City and will include turfed areas, community club house and common parking area, tennis courts, picnic areas and so forth.

A plywood folded plate roof, supported in large part by the tubular mullions, is the prominent structural feature, and lends itself to the light, open garden pavilion atmosphere.
Court Toward Multi-Use Unit

Roof Plan and Courts

Photographs by Karl H. Riek
The Gibraltar Savings Building, in Houston, Texas, is a simple cubical form enclosed on three sides by uninterrupted glass surfaces extending from the principal floor level to the roof; on the fourth side, by an unbroken wall of decorative aggregate surfaced panels.

Use of solar gray, heat-absorbing plate glass set in gray anodized aluminum framing gives an impression of mass from without and an openness from within.

The ground floor is devoted to lobby and driveways and sufficient planting to provide the desired setting. Drive-in windows are equipped to handle routine transactions with dispatch. Attendants park customers' cars in the basement garage while they transact their business on the upper floors, which are reached by escalators and elevators from the lobby.

Mechanical equipment is largely confined to a penthouse on the roof designed for ultimate incorporation in the five future stories which the structure will accommodate.

Marble, bronze and walnut, overall carpeting, and translucent draperies are used in the public areas.

Luminous ceilings throughout all areas contribute to the spaciousness by day, and divide the building into planes of light at night.
Progress continues on the Case Study Triad with an opening date set for the late summer. The colors have been selected and painting is well under way. House "A" has its resawn 1" x 4" T & G redwood walls coated with Pittsburgh Paints "Rez, in a warm, grayed sepia tone. The "Rez" allows the rich grain texture of the redwood to come through yet provides a continuity to the surface for a contrast with the white plaster walls. The entrance courtyard is completely understated with all trim and redwood in the grayed sepia tones, with only the 10'-0" high entrance door in white. This area has been keyed in this manner as an extension of the simple elegance of the interior furnishings.

House "B"—This house in contrast to "A" and "C" is enriched by the texture of the Harold Jones Lauan siding. The 10'-high entrance door is ice blue. This door and the ice blue canopy at the courtyard between the living room and the master bedroom are the only departure from the total color of the building. The Mosaic tile floor in hacienda beige provides an excellent foil for the simple lines and pure color of the contemporary furniture.

House "C"—Here the Harold Jones Lauan siding is coated with Pittsburgh Paints "Rez" in muted bitter cocoa tones contrasted with white plaster walls.

Landscape plans are complete and the materials will soon be installed by the landscape coordinator, William Nugent. The total concept (Continued on page 28)
ALUMINUM SCULPTURE: A NEW TECHNIQUE  BY JAN DE SWART

These pieces constitute individual sculptures as part of a 120-foot mural wall created and composed by Jan de Swart on the twenty-second floor of the new Kaiser Center in Oakland, California.

Inasmuch as in this project aluminum, in its most perfect mass-produced form, had been used for the wall itself, and in large part throughout the entire building, there was, I felt, a need for contrast, for something more primitive and enigmatic to counterpoint the sophisticated surroundings. (Therefore, I turned to a metal casting technique which I had invented in the past year.) The mural wall is 120 feet long and 9 feet high. I decided to cast aluminum panels of various dimensions and compose them in tight groups in three areas of this long wall. Each grouping forms a visual unit made up of individual sculptures. Viewed from a distance, the panels constitute a mural; seen close up, each is a complete experience in itself; every casting being in sharp contrast with the others of the same group, complementing and accentuating its neighbors. It was necessary to develop a process of casting molten metal into forms of wood which underwent a controlled process of partial disintegration.

If the materials are carefully balanced they reveal their characteristics most dramatically in the freedom of their fluid state. When this exuberance is caught in the casting the organic stringency between the elements becomes visible. Deliberate planning, encompassing every detail, gives one complete control over the many complexities contained in each casting, even the structure of the surface and the final finish. It is unique in this process that all these elements are incorporated in the wood form. At the climactic moment when the piece is cast everything happens simultaneously: all the gases, chemicals, crystals, minerals, materials are instantly and finally fused into a harmonious whole.

This is a casting process of great depth and scope. It requires the will to create and the willingness to let creation take place. It is a process toward the organic, influenced by innumerable organizing forces that shape whatever is complete and balanced . . . where the ugly and the beautiful are one; where there is order in devastation; where the accidental is the most directed, the most adjusted; where there is no tension but all-tension; where meaning springs from the merging of opposites.—JAN DE SWART.
IN THE FOREST

JAN DE SWART

BRIDGE

WOMAN

ARCHITECTURAL LANDSCAPE

JERUSALEM
This is one of two pilot houses of steel developed for a hillside lot. The objective was to take full advantage of technological advances and production methods to produce a house with maximum performance at a competitive price. The problem was to design within approximately 1200 sq. ft. a house with three bedrooms, two baths, living room, family dining area, kitchen, plus a two-car port and utility and laundry area. The irregular site has a thirty-five-foot drop in 120 feet.

The simplicity in detailing and ease of erecting of all component parts was a maximum consideration. The framing system, of the lightest available steel columns and beams at 10' on center, spanning 30', was shop fabricated, trucked to the job and bolted to the foundation. The frame is covered with light gauze metal decking, spanning from beam to beam, and making a finished ceiling and roof to which Fiberglas insulation and a built-up roofing were applied.

The exterior space was enclosed with transparent, sliding, aluminum-frame doors bolted directly to the structure. Pre-assembled solid partitions of 1 1/2" sandwich plywood material were keyed into the pre-assembled steel angles with the frame. The elimination of all bearing walls made it possible to obtain maximum interior flexibility. Interior space was divided, as required, by cabinet "space dividers" in place of customary walls. All cabinets were pre-assembled in the factory and set into place after the building was enclosed.
REDEVELOPMENT PROJECT BY A. QUINCY JONES AND FREDERICK E. EMMONS, ARCHITECTS

The design represented here is one of garden and walk-up balcony apartments for family living in the heart of San Francisco. There are three basic floor plan types in the development. Two plan types are three bedroom with two baths, living room, dining, kitchen and family room. The third type is a four bedroom unit. All the four bedroom units will be at ground level for direct access to garden areas. All three plan types provide the full facilities of a three or four bedroom house. It is felt by the developer that this is the type space most needed in the central metropolitan area. The usual concept would have been to build one, two and three bedroom apartments.

Each apartment is provided with private gardens or balconies for both its living and bedroom areas, thus providing for the necessary separation of family activities not often considered in apartment design. The spaces between the buildings are landscaped to provide areas for quiet adult gathering and children's play in shady, green surroundings. The architect feels this character of repose is a necessary contrast to the bustling city that surrounds the development.

These units are planned so that to walk from the ground to the upper unit requires a climb of only one flight of stairs. The buildings are planned so that the maximum possible number of units have advantage of north, south and east exposures. The intent of this development is to sell the units on a cooperative basis. A separate

(Continued on page 28)
For Case Study House Triad

Designed by Killingsworth, Brady and Smith, architects

The following are specifications developed by the architects for the Case Study House Triad and represent a selection of products on the basis of quality and general usefulness that have been chosen as being best suited to the purposes of the project and are, within the meaning of the Case Study House Program, "merit specified."

STRUCTURAL

Douglas Fir Framing and Glue-Laminated Beams—West Coast Lumbermen’s Association, 1410 S. W. Morrison Street, Portland 5, Oregon.

Roofing and Insulation—Owens-Corning Fiberglas Corp., Toledo 1, Ohio.

FINISHES

Wall Surfaces—
House A Resawn Redwood 1x4 Butt-Joint, California Redwood Association, 5740 14th Street, San Francisco 11, California
House B Philippine Lauan Sliding, Jones Yener and Plywood Company, P.O. Box 232, Eugene, Oregon
House C Philippine Lauan Sliding, Jones Veneer and Plywood Company, P.O. Box 232, Eugene, Oregon

Ceramic Tile—
House A Pomona Tile Manufacturing Company, 621-33 North La Brea Avenue, Los Angeles 36, California
House B The Mosaic Tile Company, Zanesville, Ohio
House C Gladding-McBean and Company, 2901 Los Feliz Blvd., Los Angeles 39, California

Acoustical Tile—Owens-Corning Fiberglas Corp., Toledo 1, Ohio

Paving Surfaces—
House A White Presto Cement, Concrete Coating, Inc., 21236 So. Figueroa, Torrance, California
House B Quarry Tile, The Mosaic Tile Company, Zanesville, Ohio
House C Brick, Davidson Brick Company, 4701 Floral Drive, Los Angeles 22, California

Pool Coating—Poly-Farm Manufacturing Company, 1960 Del Dios Highway, Escondido, California

DOORS AND WINDOWS

Sliding Glass—Arcadia Metal Products, 801 South Acacia Avenue, Fullerton, California
Glide-All Sliding Wardrobe Doors—Woodall, Inc., 801 Volley Blvd., El Monte, California
Jalousie Windows—Louvre-Leader, Inc., 1045 Richmond Street, Los Angeles 33, California

FIXTURES

Plumbing Fixtures—Briggs Manufacturing Company, 6600 E. Fifteen Mile Road, Warren, Michigan
Fans and Hoods—Trade-Wind, Division of Robbins & Myers, Inc., 7755 Paramount Place, Pico Rivera, California

Luminous Ceiling—Integrated Ceiling Co., 11766 West Pico Boulevard, Los Angeles, California

Switches—Bryant Electric Company, Bridgeport 2, Connecticut

APPLIANCES

Ovens, Ranges, Refrigerators—Thermadry Electrical Manufacturing Company, 3119 District Boulevard, Los Angeles 22, California
Waste Disposals and Dishwashers—Weite King Corporation, 3300 East 50th Street, Los Angeles 58, California

Electric Can Opener—Trade-Wind, 7755 Paramount Place, Pico Rivera, California

CABINET

Carver Cabinet Company, San Diego, California

FURNISHINGS

Frank Brothers, 2400 Long Beach Blvd., Long Beach, California

SKYLIGHT

Construction Plastics, 7926 West 3rd Street, Los Angeles 48, California

STEEL COLUMNS

Custom Bronze and Iron Works, Chula Vista, California

PLASTER

Perm-Wall, Inc., San Diego, California

REDEVELOPMENT PROJECT—A. Quincy Jones and Frederick E. Emmons

(Continued from page 26)

of the planting has been directed toward continuity of the Triad, yet with individual interest for each of the parts. The dominant theme of the composition is the 16'-0" for the 150 foot perimeter, and the 3'-0" lower level. Cissus Capensis (evergreen grape) will be espaliered at the extremities of the redwood front walls. The pale yellow green of the evergreen grape provides a fine background for the grays of the olive trees and the sepia tones of the wood. The proper treatment for the formal entrance courtyard has provided quite a problem. The original concept provided rows of match clipped Ficus trees on either side of the pool. Upon examining the space of the court when it was framed, it obviously was not the right solution. The present solution seems right with simply matched espaliered evergreen grape on the walls on either side of the pool. This simple form is repeated in the massing of white petunias at the pool line to the base of the walls. This may once again be changed when the pool is completed. It may be necessary to achieve a major repetition on either side of the pool. If so, the grape will be kept, but huge white pots, five on a side, will be set upon a simple base set in turn on the fine texture of Hahns ivy. These will be planted with clipped Raphiolepis introducing pale pink flowers and deep sepia berries into the composition. The planting at the master bedroom courtyard will be developed to feature the fine Italian sculpture set on the basic axis in a balanced composition. On either side of the sculpture fountains will be grouped. On each side of the white Pomona Tile terrace, yellow violas will be spread.

The total composition will be featuring the grayed-white tones of the sculpture, set against the muted sepia of the redwood walls with the pale greens on either side of the fountains. At the base and as a softening element for the white terrace, the ochre yellows of the viens will be placed. The terrace to the west off the living room will be sheltered by screen planting from the hot sun. On the east side of the screen wall Dicksonia Antarctica and Hawaiian tree ferns will be combined. The terraces and the view to the north from the living room have become a special problem. The view is magnificent with the total coast line to the north, but unfortunately the utility companies have dominated the view at the 4'-6" level with a major black cable and several minor obstructive wires. The cost of moving these cables and wires would be prohibitive. The solution then ap-
pears to be the de-emphasizing of the problems with low screen planting to a 3'-0" level and a system of delicate screening through which the view is seen obliterating the smash of the ugly wires. The screen planting is shown as Xylosma and Grewia combined. The trees are shown as Acacia Podalyricifolia. These may change to a bank of lemon eucalyptus (Citrodora). The motor court from the kitchen will be screened by a native sycamore (Platanus Racemosas) set in a huge tub.

House “B” and “C” courtyard—On either side of the drive a huge banking of Petunia Hybrida will be set in shades of grayed-leaved sedums. At the top of the 9'-0" incline, the Olea Europaea (olive) are located in a base of large rock outcropping. At the focal point of the drive and the base of the hill above and beyond the house there will be a clump of Jaccaranda Aculifolia, Prunus Cerasifera and Albizzia Julibrissin. The whole of the hillside will be a combination of bougainvillaea and Streptosolen Jamessonii.

House “B”—At the front of the reflecting pool a bank of ice blue petunias will be set against the white walls; on either side of the ice blue door Cisus Capensis (evergreen grape) will be expalinated. The longer tendrils will be spread up and over the suspended trellis over the pool. The intimate inner courtyards will be planted with Cycads which will provide a delicate symmetry to the total composition. At the view end of the courtyard Cedrus Deodar Compacta will frame the view.

House “C”—At the front of the reflecting pool a bank of the ice blue petunias will be set reflecting the theme of House “B” and the unity of the Triad. The focal point of the entrance hall is an intimate garden. This is planted with banks of ferns, Dicksonia Antartica and Hawaiian tree ferns, with base cover of Hexilino (baby tears) and matched rock paving. The view from the living room is seen through a fern grouping at the corner of the terrace and a view to the fine old olive tree. Nandina Compacta is silhouetted against the Facterlite glass screen. The master bedroom is partially screened to the northwest by a large clump of Acacia Podalyricifolia with base planting of Viburnum Robustrum and Xylosma Senticosa. The screening off the master bath and secondary bath is softened by vines of bougainvillea and Wisteria Floribunda with base planting of delicate ferns and Hahns ivy.

THE VISUAL ARTS TODAY—GYORGY KEPES

(Continued from page 13)

importance in transforming our world of chaos into order. The new setting, both natural and man-made, has its own dimensions of light, color, space, form, texture, rhythm—a wealth of qualities to be apprehended and experienced. A grasp of the new conditions, on the sensual and the emotional levels, may yield forms and images that provide a vision of contemporary reality.

In the crisis of scale presented by the complex condition in which we now live, we face two different but related obstacles to meeting its challenges. One is the corruption of our visual surroundings by cultural forces divorced from art; the dirt and clutter of the uncontrolled and ugly man-made environment infect us and numb our capacity to see. The other is the discouragement of our creative artists in the face of a surrounding chaos and a new setting, both natural and man-made, has its own dimensions of light, color, space, form, texture, rhythm—a wealth of qualities to be apprehended and experienced. A grasp of the new conditions, on the sensual and the emotional levels, may yield forms and images that provide a vision of contemporary reality.

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Piet Mondrian, Fernand Léger, and the architects who shared their new kind of vision—opened their eyes to the wealth of the industrial civilization and tried to bridge the gap between a rational and an emotional understanding of it. They accepted science and technology as a value, and welcomed the visual forms generated by the new conditions of modern life. Artistic goals were also tools for a proposed social transformation; in a period of social upheavals and revolutions, of disillusionment and pessimism, they had an absolute faith in the future, they created an aesthetic of dynamic space and precise, clear, machine-inspired forms, and in their working theories they employed such key words as "honest," "functional," "economical," and "architectonic." They developed a deep sense of interdependence, between man and environment and between man and man, as embodied in the painting of pictures or the shaping of buildings.

We see now that these men were overoptimistic and overconfident: the problem was bigger than they knew. Creative artistic use and interpretation of the values latent in our technical civilization required a profound confluence of art and science, sensibility and knowledge—a stage difficult to envisage, let alone assume. A completely successful solution of artistic problems could not develop while human minds were splintered, while men lived in a world divided—socially, politically, personally. Although the architectonic vision was one of the stirring achievements of our century, it lacked the breadth to comprehend both our outer and inner worlds.

The modern failure to achieve common boundaries is symbolized in some of the authentic documents of the recoiling mid-century mind, especially in the manner these are presented to our view. A beautiful crystalline structure in America's greatest city (itself a symbol of the finest thinking in contemporary architecture and at the same time, like the forre of medi eval Tuscany, a boastful symbol of wealth and power) displays, in surroundings that state an absolute control of contemporary materials and techniques and a perfect mastery of the new beauty of architectural space, images of the torn and broken man. In its offices and corridors are paintings and sculptures shaped with idioms in tune with the twilight soirit that created mountains is billions and billions of hunks of matter, hot or cold, floating around in darkness echoing the great scheme of aimlessness.

To the men of today's generation, the key words of yesterday have too bold and confident a ring. Some of these men retire to the caves and jungles of the unconscious and explore contracting spirals diminishing toward oblivion. Others go slumbering in inner areas of corrosion, burning and tearing—displaced persons who tour the inner ruins much as, in the last century, the Romantics toured the ruins of the outside world. Still others mark time, finding a way of staying in the same place but keeping their sojourn interesting: these immerse themselves in gadgetry, playing inside elaborate boxes of colors, lines, and spatial layers, obsessed with the precision of relationships and the refinement of space effects, narrowing more and more the visions they had two decades ago. Rather than accept the creative challenges within the range of the visual arts, rather than learn to see a broader world, most of us, our artists included, divorce ourselves from common obligations, turn our backs on the rational, and separate man from himself, from his fellow men, and from his environment.

The artistic expression preferred at this point in time is fluid, amorphous, and undefined. Although the best among contemporary artists have created images of a shining inner structure in spite of all programs, there is spreading in this sophisticated world a new type of artistic image that has made a central principle of the unformed, the irrational, and the uncontrolled. The created image is constricted in space and meaning, and is reduced to the elementary experience of the kinesthetic pleasure of the act of painting. Some painters limit their horizon to the space within physical reach: others require a direct sense of physical contact with their space-creating image. Jackson Pollock, whose work has had a major impact on the present generation, once commented, "My painting does not come from the easel. I hardly ever stretch my canvas before painting. I prefer to tack the unstretched canvas to the hard wall or the floor. I feel nearer, more a part of the painting, since this way I can walk around it, work from four sides, and literally be in the painting." The bright-colored Hortus oculus of the medieval painter finds its faulted twentieth-century projection in this picturing of a nest, with the creative act weaving a blanket against the chilling wind of memory.

Another painter, Willem De Kooning, has written: "The space of science—the space of the physicist—I am truly bored with by now. Their lenses are so thick that, seeing through them, the space gets more and more melancholy. And it contains billions and billions of hunks of matter, hot or cold, floating around in darkness echoing the great scheme of aimlessness.

"The stars I think about, if I could fly I could reach in a few old-fashioned days. But physicists' stars are used as buttons, buttoning up curtains of emptiness. If I stretch my arms next to the rest of myself and wonder where my fingers are—that is all the space I need as a painter."

Here the total world, the common world that unites the thinking mind, the motivating heart, and the acting body, is denied an unity, for such a unity seems beyond hope. It takes a special courage today to face the heavy odds of a blighted landscape; the vulgar faces of cities; the hard, mechanical rhythm of the industrial scene, so out of time with our hearbeats, our desires, our hopes; and the fantastic expanse of cosmological pattern, from ultramicroscopic to superastronomical, unrolling from the looms of science. It takes still more courage to take this whole as a whole.

Before now in history, men have risen to the creative challenge of altering human consciousness in order to orient themselves on a higher level. Through such modifications of consciousness we have become manifestly distinguishable from the biologically identical men of the Ice Age. Artistic sensibility has had its role in this process, in teaching all of us to see and in developing models and symbols from which concepts have been built.

There can be little doubt that this is an age of extraordinary vitality and promise. It calls upon artists for more life long protest: its enormous potential for undreamed-of harmonies and rhythms demands new levels of sensibility, a new capacity for unification, a new creativity. Our buildings of glass and steel

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rival nature's structures in their size and strength; the lights of our cities recall the glories of medieval stained-glass cathedral windows in their richness and purity; small electronic tubes rival the flowers in their delicacy and order. There are new values: the speed and precision of machines; the energy of a dynamic society; the new ranges of space opened by science and technique. There are a host of exciting new images arising in a hundred different fields of science. The new scale is not a disaster.

Machine rhythms can be tamed, they can become the rhythms of human needs. Blight in the man-made environment can be repaired, and with it the corrupting damage inflicted upon twentieth-century men. Artists can explore the new science-borne horizons, make them accessible to our common perception, and develop consistent, orderly images and symbols. The public can be brought to an appreciative understanding of the minds and feelings of creative people.

Our scientific perspective, our cultural legacy, and our art too, can help bring our sensations, feelings, attitudes, and thoughts into harmonious correspondence with the broad movements of nature and society. But our transformation of ourselves and our surroundings must proceed from a knowledge that we can meet new circumstances and grow with them.

We can move once more with confidence through the world, provided we unify our experience of eye and mind. Symmetry, balance, rhythm, sequence express essential characteristics of nature—phemonas: the connectedness of nature—the order, the logic, the living process. Here science and art can meet on common ground. The challenge of scale can be met only if we broaden the base from which we view and live the world. We must use our faculties to the full—with the scientist's brain, the poet's heart, the painter's eye. Through our scientific knowledge we are aware of the biological and psychological requirements of men, and so can begin the restructuring of the man-made world and restore the balance between men and their surroundings. The symbols of order needed for this major task may be drawn from the poetry of image awaiting the explorer of new horizons.

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MUSIC

(Continued from page 8)

Among all the virtuosi I have known I have never seen such hands as those of Mr. Lui, long, slender as a bird's foot, and seeming all muscle over a fragility of bone. They recalled to me saw his hands hanging before him, curved like an eagle's claws.

In the inusculature of a hand capable of such flattening the poet's heart, the painter's eye. Through our scientific world and restore the balance between men and their surroundings. The symbols of order needed for this major task may be drawn from the poetry of image awaiting the explorer of new horizons.

There is another sort of hand, and I watched it moving across the face of a long drum in the Javanese gamelan. It is capable of an absolute precision, such as we never see among European musicians, and every part of this flat hand is separately capable of striking the drum-face by an angular undulation, without curving. I knew that this musician had been trained from boyhood to play the drum with his hands, and I identified him later as Hardjo Susilo, the Indonesian musician. When he came before the curtain to sing extracts of poetry from the Tjentinten, the epic poem of Java, he walked slightly bending forward, his toes turned out, a decorum so entirely of the culture he represented that to move like that was a gesture as distinctive as the Kelana dance gestures of the warrior before battle he performed for us in full costume with magnificent intensity.

In this one particular the hands of Mr. Lui and of Mr. Susilo are alike; they are capable of becoming absolutely flat. A Westerner can flatten his hand, but he has never been accustomed to flatten it absolutely; always some portion of the hand curves, at palm or finger-tip or in the articulation of the thumb and palm. In the musculature of a hand capable of such flattening the articulation of thumb and palm are distinct, Mr. Lui's thumb appearing almost as long and independent in action as another parallel finger. The cause of this flat hand, however developed by instrumental training, would seem to be not the instrument but the use of the hand for many other purposes in a culture where the articulate hand serves the purpose of common implement and tools that our hands grasp, we will observe a similar flat hand, less articulately developed, among Negroes newly come out of our non-urban Deep South. The formally leaning walk, the formal movements of the dance, the formal positioning of the hands playing instruments report a constituency of habit we are likely to misrepresent, if we derive external rules for them and think of them as "ethnic."

If Mr. Lui's virtuosic display on the pipa rather effaced the stylistic distinctions of the music, his more reserved performance on the chin fortunately did not. This hollow log, flattened and most delicately worked to make a resonating sound body, is the ancestor of the larger Japanese koto and relates to the koto in the same manner as the Western clavichord to the harpsichord. The chin has seven strings, the koto thirteen. The chin sounds most delicately as a solo instrument, too soft to be accompanied by any instrument except a flute; the koto can be orchestral or a solo instrument. Mr. Lui strings his 700 year old chin with nylon strings, admitting that the nylon strings are less resonant, though probably not less loud, than the original silk strings. He did not make clear his reason for doing so. A similar differentiation applies to the use of nylon plectra on the harpsichord; they produce tone less mellow than that of buff leather plectra and give less overtone than the older quill plectra.

I regret that Mr. Lui did not divide his recital more evenly between the two instruments, playing the chin only twice, so that our inability to adjust our attention at once to the more delicately expressive soundings of this very ancient instrument prevented us from more than grasping at its extraordinarily sensitive and reticent art. As the seldom heard clavichord is among the most demanding and expressive of European instruments, so it seems to me at first contact that the chin is among Oriental instruments.

I was sorry to miss the much praised flute playing of the Indian musician Tanjore Viswanathan and also the lecture by Robert Brown on Improvisation in South Indian Music which accompanied this recital.

The first program I attended was given by a group whose work I have previously reported, a program of Gagaku, Japanese Court or Ceremonial music, which survives, however modified by passage of ten centuries, from its time of ascendance, the Heian period until the rise of the Shinto religion during the
twelfth century. This aristocratic and priestly art has never been known or practised by the common people of Japan.

The Heian period corresponds to the Provençal period of court love, poetry, and music in Europe, but it lasted longer and its peculiar manifestations pervaded all aristocratic society as a positive force, involving rulers and warriors as well as courtiers and women, whereas the Provençal culture seems to have been in part a refuge of small groups of educated women and their adherents against the illiterate brutality of the world around them. The Heian society set a more lasting value on its culture, which has remained the high standard of all Japanese esthetic thinking until the present day. This was nevertheless a culture of refuge against conditions prevailing beyond the narrow radius of the court; and to be exiled from court was to be cut off, as in France during the Bourbon predominance to be removed from Paris to be deprived of any culture and society except that which one possessed within oneself.

Gagaku has been for centuries a sterile, non-creative art, surviving among families of musicians who perpetuate the literature and the method of performing it by mnemonic training: the young musician learns by heart the text and melodic figures, beginning to study an instrument. Thereafter he progresses through the orchestra by seniority, until he reaches at last the double-end drum of the orchestral leader. In 1959, for the first time, the Imperial Court Orchestra of Japan, released by the Emperor from traditional duties and privileges, toured this country, the tour finding its origin in the longings of California. To illustrate the insularity of Oriental musicians from music not of their own area, at the University these Oriental musicians heard for the first time a Gamelan orchestra. They announced themselves to be so inspired by the introduction of the University Gagaku group that they consented to devote several days to teaching their members. They also recorded for Decca, though a year later this record, perhaps the only extant high-fidelity recording of Gagaku, has not to my knowledge been issued. After returning to Japan they were instrumental in gaining permission for the University musicians to dress in the traditional costume of the Court orchestra. Thus the ancient practice of adoption by which the musical tradition of the Court orchestra has been retained and carried forward through a small group of traditional musician families was translated into a new dimension, and the University group became in a sense the latest inheritor of the tradition. Unless their work catches on thoroughly enough in its new surroundings to establish itself as part of a new vogue of Orientalism in Western musical studies, they may well be the last inheritors.

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