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FEBRUARY 1962

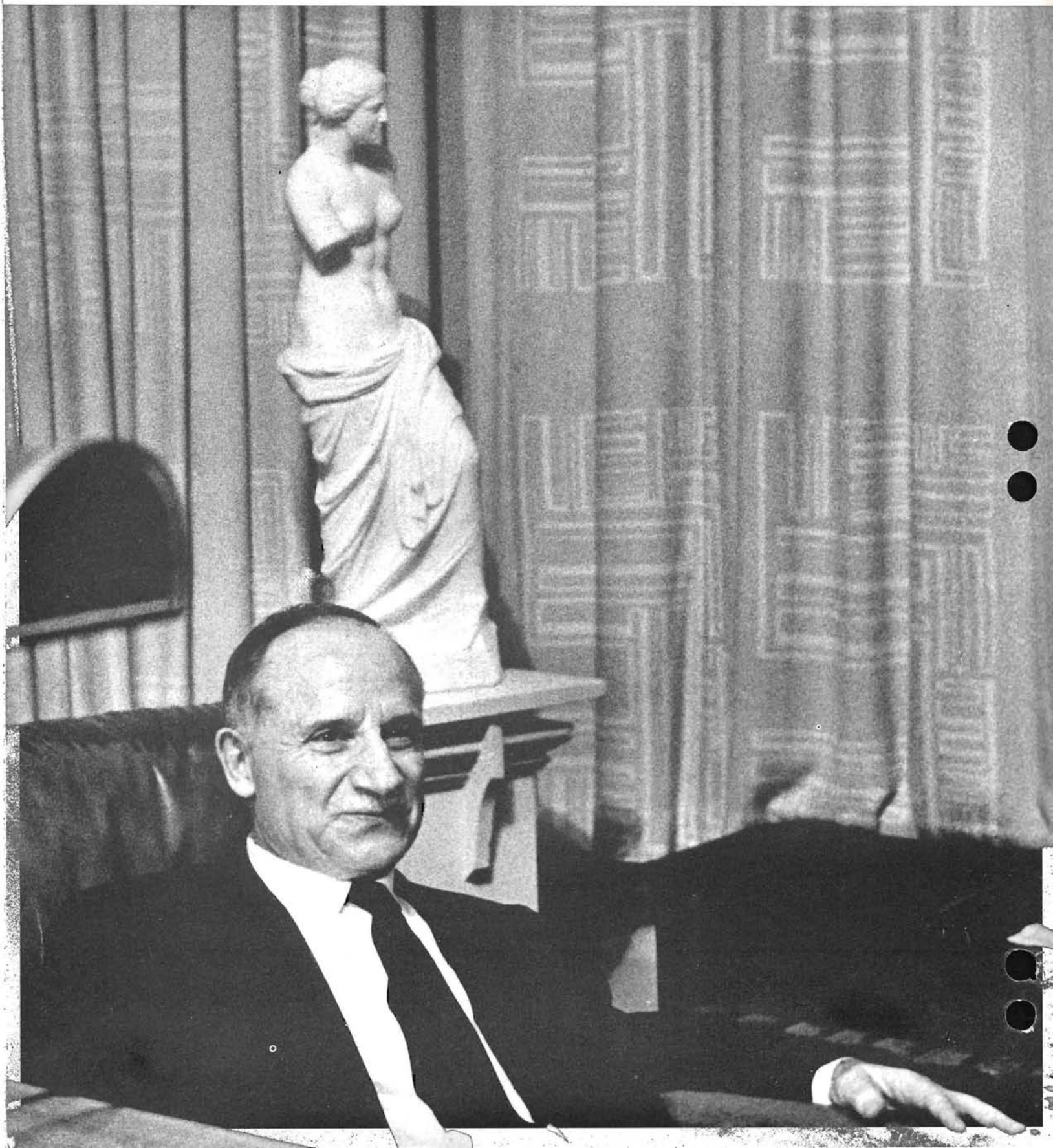
WASHINGTON UNIVERSITY

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Magazine
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Barry Arts Ball -
"Queen" - Sketch
1961

GEORGE MYLONAS, professor of archaeology, chairman of the Art and Archaeology Department, and one of the most eminent scholars in the University's history, is caught by the camera in a gay and relaxed mood. His latest book, Eleusis and the Eleusinian Mysteries, was published recently by the Princeton University Press.



FEBRUARY 1962

Editor
FRANK O'BRIEN

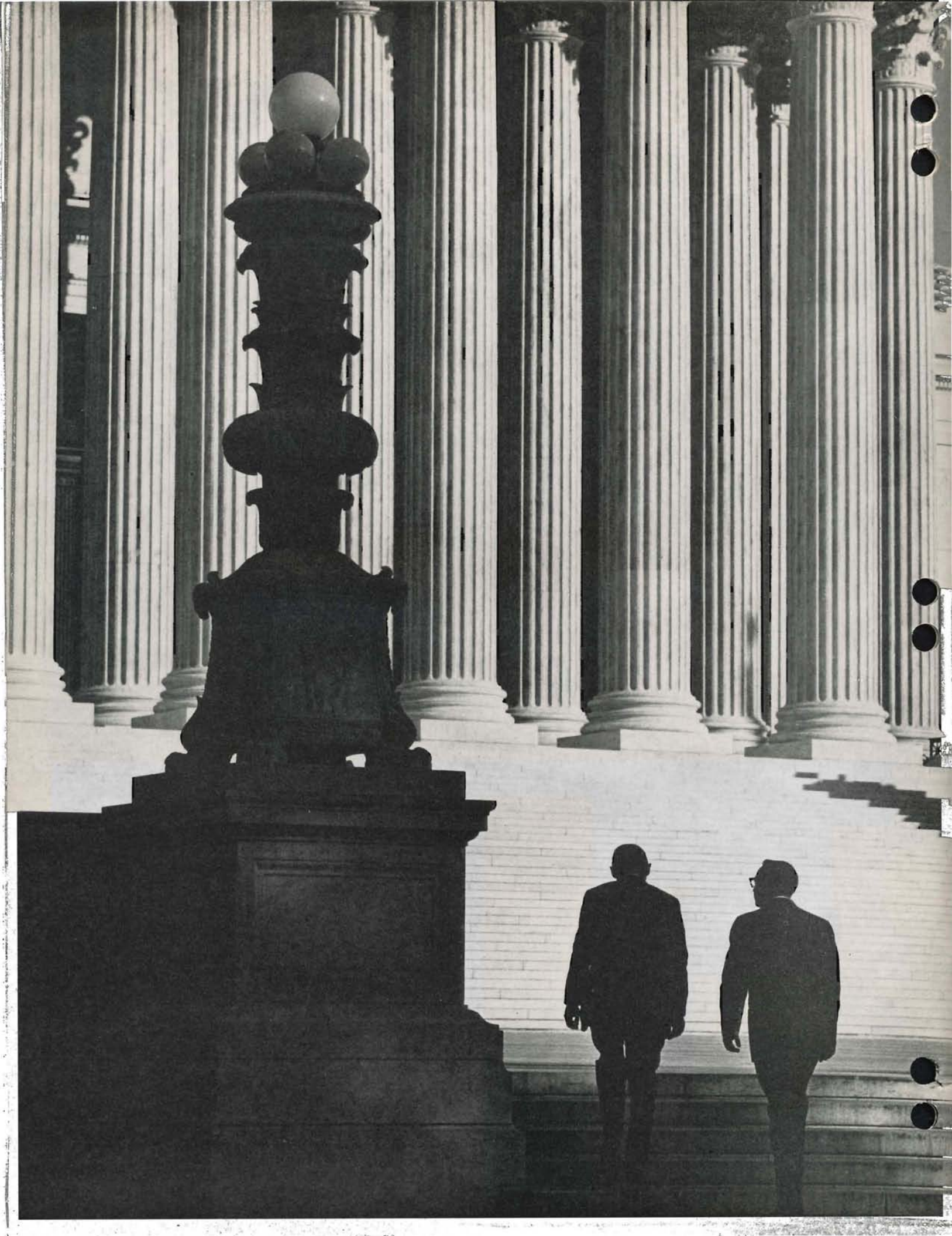
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*Washington University law graduate
Larry Gunnels is now in his second
year as a United States Supreme
Court law clerk.*

S U P R E M E C O U R T C L E R K

Perhaps the highest honor and greatest opportunity that can come to a new law school graduate is to be selected as a law clerk for a Justice of the United States Supreme Court.

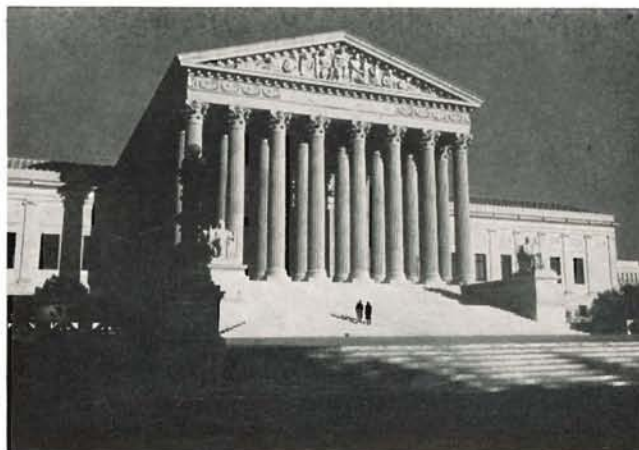
Through the years, the majority of these clerks have come from Eastern universities, although some of the Justices have ranged out across the country for their choices.

In 1957, Charles E. Whittaker of Kansas City was appointed an Associate Justice of the Supreme Court by President Eisenhower. For his clerks, he selected one law graduate from the University of Kansas and one from Washington University: Alan Kohn, who received his degree in 1955 and reported to the Court from a two-year tour of Army duty.

Last year, Justice Whittaker again turned to Washington University and selected Donald L. Gunnels, who ranked first in the School of Law Class of 1960, served as editor-in-chief of the *Law Quarterly*, and earned a whole string of awards, honors, and prizes.

Today, Larry Gunnels is serving his second one-year term as a law clerk in the Supreme Court. Usually the law clerks serve just one year, but on occasion a Justice may retain a clerk for a second year.

The tradition of employing recent law graduates as law clerks to Supreme Court Justices is a long one. Mr. Justice Holmes was the first to employ two clerks. Actually, the





Justice Charles E. Whittaker.

term "law clerk" does not truly describe the position. The law clerk is not a secretary or a file clerk. He is rather an administrative aide and a research assistant. His main duty is original legal research. He keeps track of briefs, records, and exhibits; drafts technical memoranda of law with supporting cases; and handles an enormous load of routine detail.

As a law clerk for Justice Whittaker, Larry Gunnels' job is to gather facts for the Justice, to compile references, to assemble material; in short, to do the preliminary spadework before the Justice digs in. No law clerk has any voice in the disposition of any case or in the preparation of the actual written opinion.

To a recent law graduate like Gunnels, serving as a law clerk in the Supreme Court offers an unexcelled opportunity to observe the judicial process in operation, to gain insights into the law that could be obtained nowhere else, and to observe the nation's top lawyers in action.

The position also gives the clerk the invaluable privilege of working on a daily basis with an outstanding judge; of talking with him about law and life; of receiving first-hand the observations and impressions of a leading national figure. The clerk also gets to observe at close range many other noted leaders in both the law and government. It

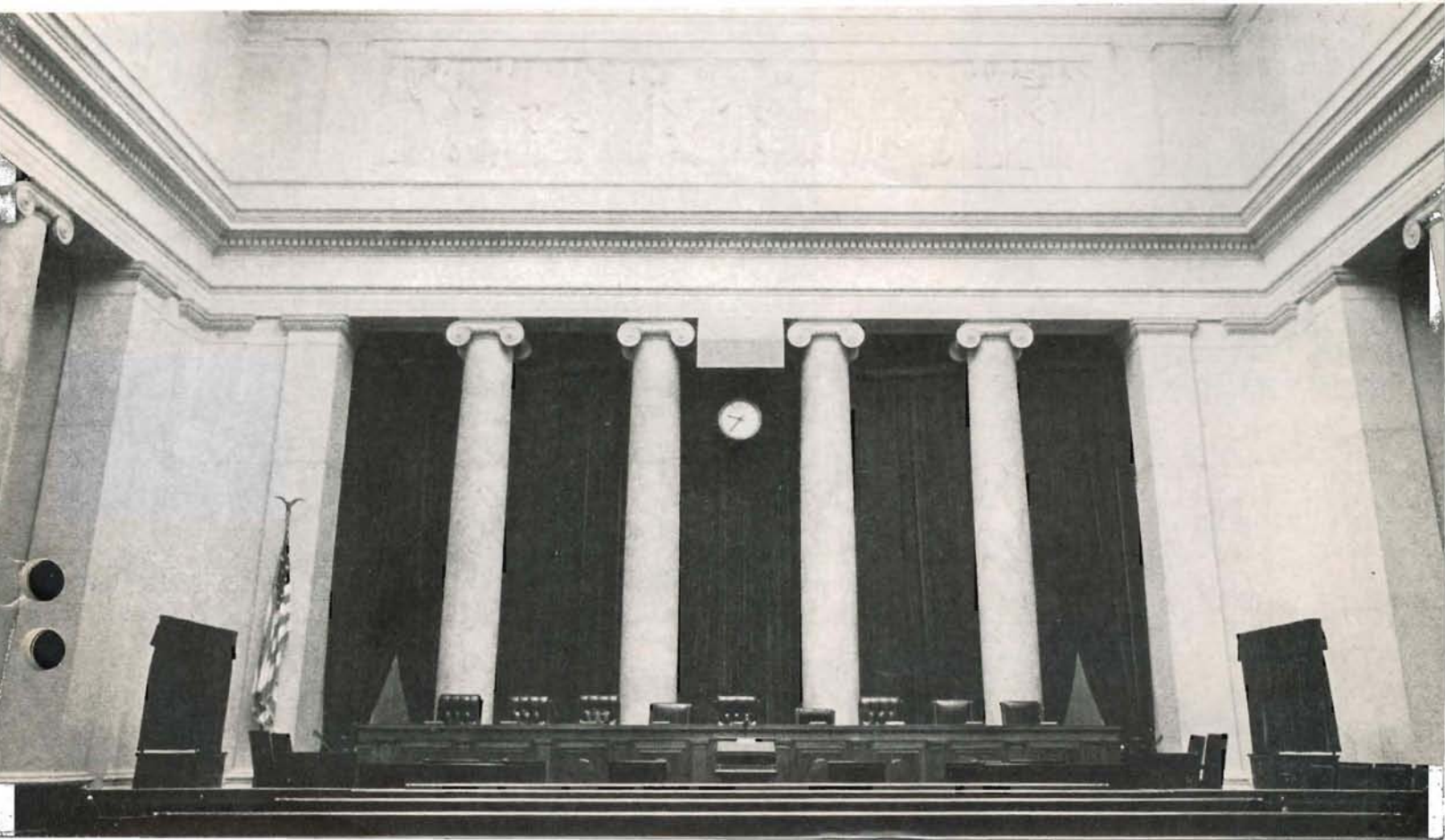
can be a broad postgraduate education—and not only in technical law.

Since entering college, Larry Gunnels has shaped his life toward the law. His undergraduate work was done at Ottawa University in Kansas, where he received his bachelor's degree in economics and political science. At Ottawa, he was active in the student council, the debating society, journalism, and drama—all most useful activities for a future lawyer.

At Washington University, for each of his years in Law School Gunnels won National Law Scholarships and received the Breckinridge Scholarship Prize. He also received the Alumni Association Scholarship Award in 1960. He was a faculty research assistant in criminal law in 1960 and was elected to both the Order of the Coif and Delta Theta Phi legal fraternities.

Even his military service served as preparation for his career. Between high school and college, Larry served four years in the U. S. Navy as a legal specialist, being discharged as a Petty Officer First Class.

"Serving as a Supreme Court law clerk is an exciting and rewarding experience," Larry Gunnels declares, "but it also entails a great deal of hard and exacting work." The





Now associated with a St. Louis law firm, Alan Kohn, who received his law degree from Washington University, served as law clerk to Justice Whittaker in 1957.



Larry Gunnels shares his office and his duties with a recent graduate of the University of Michigan law school, James N. Adler (in foreground). The two clerks collaborate on projects and work on individual assignments.



As Justice Whittaker's secretary, Mrs. Jane Pike works closely with the law clerks. Before coming to the Supreme Court, Mrs. Pike was secretary to Robert T. Stevens, former Secretary of the Army.



Supreme Court handles an ever-growing number of cases each year, and to keep them flowing through the Court requires unflagging devotion to the task. During the 1960 term, for instance, the Court disposed of 1,927 cases. Of this number, arguments were heard in 148 cases, with full written opinions being handed down in 125 of these.

The term of the Supreme Court runs from October until late June, with the nine months divided between the hearing of cases and intervening recesses. Generally, the Court sits two weeks out of each month to hear cases. During this time, 20 to 25 cases are argued orally after the parties have submitted final briefs on the merits. An enormous amount of each Justice's time off the bench is spent in the preparation and writing of opinions. The law clerk cannot assist him in writing his opinions, but he can assist in the reading, research, revisions, footnotes, proofreading, and all the other details involved.

The Supreme Court is so devised that each Justice works independently on each case. The Justices meet in private

conference once a week while the court is in session to discuss cases and to vote on them. No division of labor is practiced; each Justice studies every case, makes his own decision on every case, and votes on every case.

In the same manner, each Justice's law clerks work entirely independently of every other Justice's law clerks. At present, there are 18 law clerks working in the Supreme Court. By tradition, the Chief Justice has three clerks; by choice, Justice William O. Douglas has one law clerk; the other seven Justices each have two clerks. These clerks meet socially but work independently. They eat lunch together daily in their own dining room, where periodically they are addressed by members of the Court or by other outstanding legal or governmental figures.

Larry's office-mate this year is a graduate of the University of Michigan Law School, James N. Adler. The two young law graduates share an office separated from Justice Whittaker's quarters by the office of his secretary, Mrs. Jane Pike. Adler joined the staff after Larry had completed his first year, preserving continuity of operation



and permitting the experienced clerk to break in the new-comer officially.

Larry Gunnels has a long line of distinguished predecessors who have served as law clerks in the Supreme Court. Dean Acheson was one; so were sociologist David Riesman and a host of other noted men, including former deans of the law schools of both Harvard and Yale.

Working in the Supreme Court has been a rich experience for Gunnels. The Supreme Court building, the home of the court which heads one of the three equal and coordinate branches of our government, is an imposing edifice. Acres of white marble, quartered oak paneling, and deep leather upholstery convey an atmosphere of quiet dignity and solemn purpose. After all, much history has been made in this building and much more is to be made. Here is the pinnacle of our entire judicial structure; here decisions are made that have changed the direction of the nation in the past and will shape its destinies in the future. In the classroom the law may seem something abstract and theoretical; in the Supreme Court building the law is real.

To Larry and his young wife, Doris Ann, living in the nation's capital is exhilarating. There is a sense of history, not only in the marble halls of the Supreme Court, but in the very streets of Washington. As a young couple from the Middle West, the Gunnels are thrilled to be a part of the dynamic life of the capital.

When he leaves the Supreme Court next July, Larry plans to enter the law firm of Kirkland, Ellis, Hodson, Chaffetz & Masters in Washington.

Larry Gunnels' career may be just beginning, but he's off to a great start.



Living in Washington, D. C., has been an exciting experience for Larry and his wife, Doris Ann, shown here admiring the view from the terrace of the Capitol.



Edward Shepherd Mead's latest success in a long line of triumphs is the smash Broadway musical hit based on his best-selling book, How to Succeed in Business Without Really Trying.

Since leaving Washington University in 1936 with a Bachelor of Arts degree and a Phi Beta Kappa key, Mead has gone on to become first a top-flight advertising executive and then a popular and prolific novelist (The Big Ball of Wax, The Admen, The Four-Window Girl, etc.). The Meads and their three children are now living in England—in an old and spacious country home in Sussex, complete with central heating.

Shortly after the last issue of the Magazine arrived in Sussex, Mead wrote to say how much he admired the Magazine and to offer his congratulations on a good issue. In replying, the editor suggested that now that Shepherd Mead had shown the world how to succeed in business, with women, and on Broadway, he might like to write an article for the Washington University Magazine on how to succeed in college without really trying.

By return airmail came this Shepherd Mead original: the definitive work by the leading authority in the field.



In their country home in England, the Shepherd Mead family listens to an authoritative reading from *How to Succeed in Business Without Really Trying*. From left: Shepherd, Sally, Mead, Teddy, Mrs. Mead.

Courtesy St. Louis Post-Dispatch

How to Succeed at WU Without Really Trying

I CAN'T REALLY TELL you how to do this. Certainly, in the eyes of my contemporaries, I never succeeded at all. In fact, among my fraternity brothers I was regarded as a sad misfit, a dismal failure. If you'd asked any of them about me during my school years, he'd have said, "Mead? Yes, I have met him, but can't say I really *know* him. Doesn't play, you know. Never got beyond auction. *Doesn't even know how to play contract.*"

This, I must warn you, was before the earnest, hard-driving post-Sputnik days. We had no Russians to outstrip. We were happy, complacent. Poor, too, of course. It was the time of the big Depression. My fraternity brothers, in fact almost *all* the brothers along the Row, were engaged in one long bridge game. Maybe it was because bridge was the only amusement that didn't cost anything.

I stayed out. No feeling of moral superiority. Purely a mental quirk. The psychiatrists tell us that some boys hate their fathers, a Freudian sexual rivalry over the love of their mothers. Not me. I liked my father fine. I hated bridge. That was *my* rival. Mother may not have liked bridge more than Dad, or me, or my brothers, but she gave it a lot of her time. (Mind you, she was a perfectly serviceable mother in every other way.)

Since everyone else was playing, there wasn't anyone for me to talk to. The only thing left was work. I knew it was a social error, but I was lonesome. The professors were amazed. I shot to the top of the class. It wasn't that I was very bright. They were grading on a curve, and everybody else was playing bridge.

All the editorships and campus offices were controlled—perhaps they still are—by the fraternity political "combines," with almost no regard to merit. My brothers of the combine tossed me happily into a whole series of offices.

"How about Mead?" they'd say.

"Who's Mead?"

"He's the fellow who doesn't know how to play."

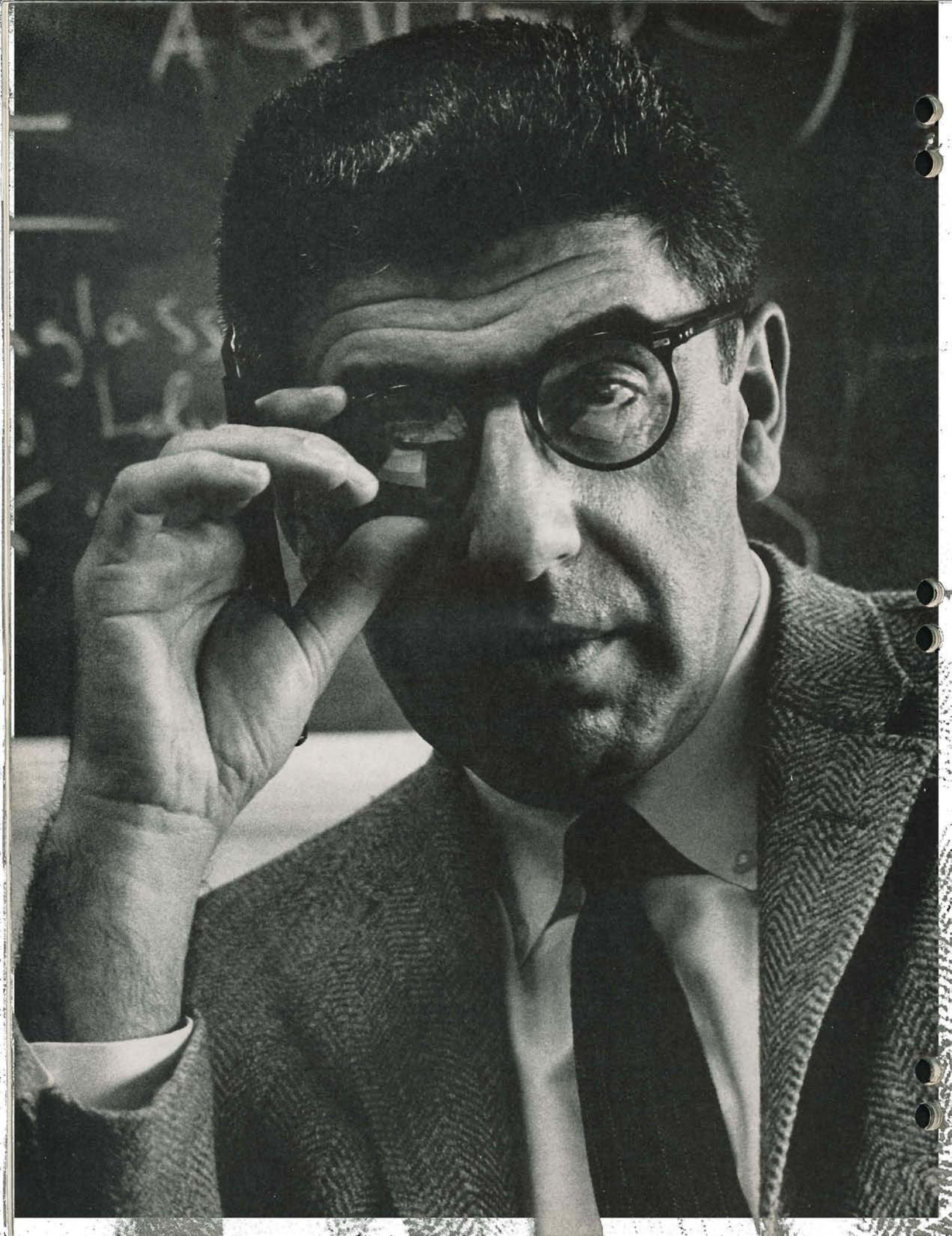
"Oh, well, then, I suppose he must have something to do."

The best plum was the magazine. Bill Vaughan was editor, and I was managing editor, of the old *Dirge*, the college comic magazine at the time it was censored into oblivion. (Bill, I should add here, was a notable exception to the rule of sneaky influence. He was by far the best cartoonist in school, and even had had cartoons accepted by *Dirge* when he was still in high school.) Bill and I were both just sophomores at the time, and both of us pure as the driven snow. (We were *then*.) We were told, though no one was really sure, that the last straw on *Dirge's* back was an exchange joke, clipped from some other magazine. The joke was: "Where's Cleopatra?" "She's in bed with laryngitis." "Damn those Greeks." It may not shock you now, but it shocked them then. Bill and I hadn't even selected it. It had appeared in the last edition of the previous regime, a forlorn group who had been fighting, backs to the wall, to do anything to get the bridge players to read at all. (The only edition that had ever sold out was one in which they had a cartoon at the bottom of a page. It showed a man and woman sitting up in the same bed. A strip of paper had carefully been torn off the page, under it, in every copy. The edition sold out because everyone hoped to get the one that had the caption. The secret was that there had never been a caption at all.)

THE NATIONALLY ALLOCATED cigarette advertising, which supported all the college comics, was shifted to *The Eliot*, the stark little literary magazine that I'd been helping to publish by mimeograph, with Gordon Sager, the editor. In the second year of *Eliot's* affluence, I became its editor, and thanks to a brilliant collection of writers and artists, mostly barbs, we had quite a run for the cigarette money. Bill Vaughan went on to become a fine editor of *Student Life*.

I suppose things are different now, with slide rules and Russian grammars in place of Bicycle decks and score cards.

May be all for the best, you know.



IN DEFENSE OF BIOLOGY

A GREAT DEAL HAS BEEN SAID of late about the flourishing state of biology and its exciting progress toward the solution of basic problems. There would appear to be little need for a defense of biology, zoology, botany, or any other part of the sciences of life.

Certainly much of this is true. Remarkable progress has been made in our understanding of important biological processes: metabolism, photosynthesis, the biosynthesis of macromolecules, the structure of viruses. Yet certain equally fundamental questions that have long been of concern to biologists have firmly resisted the recent winds of progress. We still have but inadequate answers to the questions: What is the cause of speciation? How do cells differentiate? What processes dictate their division, growth, and cessation of growth? How does inheritance control these developmental processes? Obviously, some areas of biology are still making relatively slow progress.

What distinguishes the slower areas of biology from those which seem to grow by startling jumps ("break-throughs" in newspaper parlance) and which surround themselves with glamor? The fast-growing fields, which appear to represent the cutting edge of progress in biology, are those in which the biological problem has been reduced to chemical or physical terms. The slower-paced areas are those which have thus far largely resisted this advance. When a biological problem can be restated in molecular terms, the enormously powerful insights and instruments of modern chemistry, physics, and engineering can be brought to bear on it. Under such a massive attack, quite rapid and sometimes spectacular discoveries are made.

Of course, there is a more homely way to distinguish between the two types of studies. In the fast-moving fields the laboratories are large and densely packed with expensive electro-mechanical apparatus, students, and postdoctoral fellows. In the other areas of biology, we see some microscopes (optical, that is), herbarium sheets, and fewer people.

From almost any viewpoint there seems to be a widening gap between the more traditional areas of biology and those which are closely related to modern chemistry and physics.

It is true, of course, that chemistry and physics have come to occupy an increasingly important place in *all* areas of biological research, including the traditional ones. But the levels of application current in the two segments of biology are vastly different. While investigations of the more traditional sort may concern themselves with pH or oxygen consumption, really modern biological studies

feature semiconductors, charge-transfer complexes, radioisotopes, and information theory.

How well can such a divided science work? Will the very problems that attract the more glamorous laboratories be advanced, in the long run, in circumstances which preclude a close contact with taxonomy, evolution, and morphogenesis?

One view is that this separation is inevitable and healthy—that traditional biology has served its purpose and must now give way to biochemistry and biophysics. A recent review of Isaac Asimov's new book about modern biology states that "For him . . . biology is a system that proceeds from biochemistry to the associated subjects of neurophysiology and genetics. All else, as they used to say of the non-physical sciences, is stamp collecting." "I happen to agree firmly with Asimov about what is central in science and what is not," the reviewer writes, "and I will defend him to the death against traditionalists who might deplore his not starting with 'Heat, Light, and Sound' or his giving short shrift to 'Natural History.'"

Having rarely been accused of being a traditionalist, perhaps I may be permitted to disagree with this view.

I believe that the increasing separation between "traditional" and "modern" biology is regrettable. In the narrow view, this process may have unfortunate effects on the number and competence of students in traditional departments of biology, zoology, and botany, and may be reflected in the level of support these departments command both within and without the university. But what is a far more serious matter is the harmful effect on science itself.

THE VIEW THAT BIOLOGY is only an unresolved form of chemistry and physics is not new. Biology has always produced adventitious areas of investigation which quickly lose their contact with the mother science. So long as the chemistry of rubber was poorly understood, the problem of the role of latex in the plant, of its composition and properties, belonged to biology. As soon as chemistry had advanced sufficiently to deal with such a complex substance, the problem was taken over by biochemists, physical chemists, and engineers. Certainly we have gained from this process and our knowledge of rubber is vastly increased. But how much of this new knowledge has been reflected back upon plant biology?

A similar estrangement characterizes the history of research on starch. Classical plant morphologists have produced monumental works on starch grains, which have

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unique structural organization closely correlated with the plant's specific character. In more recent years an equally impressive body of knowledge about the chemical substances extractable from the starch grain—amylose and amylopectin—has accumulated. Moreover, enzymes that synthesize these substances have been isolated. Yet an analysis of the information available from studies of extracts shows that we do not understand how the enzymes could possibly account for the presence together in the starch grain of both amylose and amylopectin in proportions which are under genetic control. Clearly, our attention must now return to the developing starch grain, and we must learn how the enzymes are disposed within it, and how the cellular environment can give rise to a precise correlation between the two paths of biosynthesis that cannot be accounted for in terms of test-tube chemistry. The stage is set for a fascinating marriage between the classical studies of the starch grain and modern starch biochemistry and biophysics. But to my knowledge no proposals have been made, consummation is a distant prospect, and fruitful results are even more remote. Why? I believe that we can blame the unfortunate separation between the classical and the more modern aspects of biology.

I BELIEVE THAT THERE IS SOME JUSTIFICATION for a generalization: As soon as an interesting and important biological problem becomes susceptible to chemical or physical attack, a process of alienation begins and the question becomes, in the end, lost to biology. But in each case, the purely chemical—or physical—studies run their course and come to the blank wall that still surrounds the intimate events which occur within the *living* cell. The obvious need is to return home to biology. But now the errant science has long forgotten its home, and the mother is too bewildered by its fast-talking offspring to be very happy about welcoming it back into the family.

Clearly, such a course of events cannot go on indefinitely, for there are, after all, only a limited number of substances and processes that can be removed without finally leaving nothing at all behind. So long as this process of alienation affected only the end products of metabolism (such as starch, rubber, or pigments), the parent science suffered some damage but no really lethal blow. But now biochemistry and biophysics have reached deep into the core of biology—to reproduction and inheritance—and the question arises as to how biology will sustain this more penetrating attack.

One view of the result of this latest event is readily obtained from the new volume that has already been referred to. The book is a summary of the present state of the biological sciences, written for "the intelligent man." It opens with the following sentence: "Modern science has all but wiped out the borderline between life and non-life."

Since biology is the science of life, any successful obliteration of the distinction between living things and other forms of matter ends forever the usefulness of biology as a separate science. If the foregoing sentence is even remotely correct, biology is not only under attack; it has been annihilated.

An explanation of the basis for this remarkable assertion is of course necessary, and it will, I believe, reveal that this statement is the crowning and wholly logical conclusion of a series of ideas which have attained considerable approval among scientists.

What evidence is offered in support of this statement? We can begin with Asimov's consideration of that marvelously meaningful problem that has for so long intrigued biologists: At what moment in the history of matter did life appear? The answer given is this: "Then, eventually, must have come the key step—the formation, through chance combinations, of a nucleic acid molecule, capable of inducing replication. That moment marked the beginning of life."

Why is this so? Because "All of the substances of living matter—enzymes and all the others, whose production is catalyzed by enzymes—depend in the last analysis on DNA."

This story is, of course, well known. The DNA molecule is a code which contains all the information required to specify the inheritable characteristics of the organism. The information is translated into protein structure by a process in which DNA dictates the specificity of protein synthesis. Once the information has been so translated, all of the chemical reactions of the cell—which are wholly determined by the structure of enzyme proteins—have also been specified. Moreover, the genes, which according to biological evidence regulate the inherited characteristics of a species, consist of DNA, and the self-duplication of DNA is the basis of genetics. In sum, DNA is the vehicle for the continuity of life.

All of us have heard this story told at every level of the ladder of scientific discourse, from research papers through review articles to textbooks and the latest issues of the news magazines. The basic ideas are attractive and widely accepted in the scientific community. Many of us have heard them in the classroom—sometimes from our own lips. And so I must apologize—and hereby do—to our helpful author whom I have rudely represented as leader of an attack in which so many others participate.

BUT CAN IT BE TRUE that the familiar "DNA story" is really an attack on biology? Let us return for a moment to the assertion that "the boundary between life and non-life has all but disappeared," for most of us will agree that, if this statement is not an attack on biology, it is at least a pretty fair insult.

If we agree both that nucleic acid is an encoded form of life, capable of self-duplication, and that it can bring about the translation of its own code into the remaining aspects of life, then it follows that, given a reasonably healthy environment, nucleic acid can indeed create life and perpetuate it. Since it is also indisputable that nucleic acid is a chemical substance, then we must agree (if all this is true) that life is essentially nothing more than an expression of the chemistry of nucleic acid. Following this closely reasoned logic, we end inevitably with the conversion of biology into the chemistry of nucleic acid and its creations.

Now the problem is more evident. Biology *does* appear to be dwindling, and in need of defense. I believe that in the last decade every academic biologist has begun to feel the realistic effects of the atrophy of biology on the life of his laboratory, his classroom, and his institution. Twenty-five years ago, bright young people eager to conquer the world of science were proud to become biologists, to study *Drosophila* genetics, plant taxonomy, or embryology. Nowadays, a student with a budding interest in genetics often ends up mating strands of DNA rather than fruit flies, and greenhouses are built to grow plants for the purpose of producing viruses. Bright young biologists, if they are good enough, become biochemists and biophysicists.

BIOLOGY DOES SEEM to be in some need of a defense. But is it worth saving? To be explicit, what I mean is this: Is there any good reason why we should resist the progressive isolation of taxonomy, morphology, physiology, and the rest of the "less exciting" fields from the areas that have apparently been won over to modern chemistry and physics?

I believe that this process should be resisted, not because the traditional fields of biology ought to be protected from the effects of chemistry and physics, but because unless biology itself survives, the great powers of these modern sciences cannot be fully used. I believe, for example, that the proper correlation of physics and biology requires that *the integrity of both sciences* be maintained in the collaborative process.

Part of the argument in support of this view has already been made: that in many instances the pursuit of a purely physical or chemical line of attack runs out of momentum and needs to return to the truly living system.

But the chief argument that I should like to propose is this: Analysis of living systems, based on modern physical and chemical theory, leads to the conclusion that life is unique and that it cannot be reduced to the property of a single substance or of a system less complex than a living cell. I propose to cite several examples of such analyses in order to show that fundamental theories of physics and chemistry support the view that there is, in modern science, no justification for the "obliteration of the boundary between life and non-life."

An interesting case in point is the matter of information theory, which now plays such an important role in proposals regarding the genetic function of DNA. The basic notion is well known: The DNA in the germ cell is supposed to contain in an encoded form all the information required to specify in detail the inheritable features of the adult organism.

Now this question has been given a searching examination by a distinguished physicist, W. M. Elsasser, in his book *The Physical Foundation of Biology* and in a subsequent article. While space does not permit even an approximate description of Elsasser's work, certain aspects of it can be simply stated. Elsasser points out that from recent advances in computer theory one can set certain fairly precise requirements on the above hypothesis. Two

critical requirements are (i) The information content of the amount of DNA present in the germ cell of a complex organism, such as a horse, should greatly exceed that present in the cell of a more simple organism, such as an ameba. (ii) Cells should contain a device for translating the code library contained in the DNA into the biological characters which it determines; computer experience indicates that the translation device ought to be considerably more massive than the library.

The available facts suggest that living things do not meet these requirements: (i) Organisms which must differ considerably in their genetic complexity often have similar cellular DNA contents, and there is no evidence that the discrepancy can be accounted for by differences in genetic redundancy or in the inertness of some chromosome sections. Conversely, organisms which are nearly identical in genetic complexity may differ considerably in cellular DNA content. The available evidence does not support the idea of a one-to-one correspondence between genetic information and the information represented by the structure of DNA, or for that matter of any other molecular component of the cell. (ii) No cytologist has discovered a ubiquitous structure, considerably larger than the chromosomes (the code library) which shows evidence of serving as a translator. While recent biochemical evidence suggests possible means whereby DNA-borne information may be translated into genetically effective protein specificity, there is still no sign of a device capable of translating the DNA code into the numerous anatomical features (fingerprints, for example) that are also inherited.

Thus, a strict analysis of the problem of inheritance in accordance with modern information theory leads to the remarkable result that the organism's specificity must be determined, at least in part, by agencies not present in the initial germ cell and certainly not in the DNA alone. Elsasser points out that this view, which can be derived directly from modern physical theory, is identical with a principle already well established in biology—*epigenesis*. This view holds that the fertilized egg begins with a limited amount of specificity, which develops into more detail in progressive, superimposed, stages. Strong evidence from embryology supports this conclusion, and recently some investigators have suggested that certain specific types of inheritance, especially in protozoa, are epigenetic in character.

THESE RESULTS HAVE AN IMPORTANT BEARING on the customary ideas about DNA, for they call into question the basic assumption that DNA (or for that matter any other single component of the germ cell) can possibly serve, by itself, as the final arbiter of biological specificity. There are many fascinating questions that arise from these considerations, but these will need to be taken up at another time.

Another notable defense of life as something unique and distinct from non-life comes from one of the great physicists of our time, Niels Bohr. Bohr has written several remarkable papers about the relation between biology and physics, which has for too long been neg-

lected by biologists and biophysicists alike. One of Bohr's contributions to physics is the theory of complementarity, which holds, for example, that the electron is characterized by both particulate and wave properties, which are nevertheless mutually contradictory (the more precisely the wavelength is defined, the less certain we become of the electron's position).

ACCORDING TO BOHR THIS RELATIONSHIP is an example of a *general* law of complementarity which applies as well to biology. Bohr suggests that complementarity regulates the relationship between two coeval aspects of biological systems: the existence of life in the whole intact cell, and the separate physicochemical events that occur within it. The more precisely we try to determine the internal events of a cell the more likely we are to destroy its life. Bohr concludes: "On this view, the very existence of life must in biology be considered an elementary fact, just as in atomic physics the existence of a quantum of action has to be taken as a basic fact that cannot be derived from ordinary mechanical physics."

Now, no one should conclude from this statement that the property of life is somehow nonmaterial and innately mysterious. Bohr is not a vitalist. On the contrary, Bohr's principle simply serves as a warning that we cannot study the property of life without retaining it in our experiments. Again, this view raises a host of fascinating questions that we cannot go into here. It is pertinent here only to show that the penetrating insight of modern physical theory reveals certain inconsistencies in the notion that life can be reduced to the chemistry of some special substance.

An equally cogent analysis of the problem, this time from the viewpoint of the kinetics of complex chemical systems, has been made by one of the founders of that field, Sir Cyril Hinshelwood. He points out that "the view that nucleoproteins are the basis of genes which could ever be self-replicating in isolation and merely in virtue of their structure is probably a dangerous over-simplification. . . . The picture presented is essentially static. The phenomena of growth, adaptation, and reproduction need a dynamic one." From a straightforward analysis of the kinetic behavior of the complex metabolic processes of bacterial cells, Hinshelwood suggests an alternative source for the self-regulation of living cells. "The building blocks of the cells, wonderful as they may be as structures, are useless by themselves. Cell function depends upon the rhythm and harmony of their reciprocal actions: the mutual dependence of protein and nucleic acid; the spatial and temporal relations of a host of elementary processes which with their sequences and bifurcations make up the reaction pattern of the cell. A system of mutually dependent parts, each of which performs something like enzymatic functions in relation to another, will, as can easily be shown, in the steady state appear as a whole to be autotrophic. No individual part need be credited with a new and mysterious virtue by which to duplicate itself." In effect, it is Hinshelwood's view that nothing less complex than an entire cell is capable of *self*-duplication.

These brief descriptions of the views of life developed by Elsasser, Bohr, and Hinshelwood reveal a considerable unanimity, and—what is perhaps more surprising—a remarkable agreement with the biologist's long-held opinion that life is inherently complex and unique. How can we explain this unexpected convergence of conclusions reached, separately, by such different routes as information theory, the theory of complementarity, the physical chemistry of complex systems, and the manifest properties of living things? I believe that what is common—and to some degree unusual—in these physical and chemical views of life is that they are profound. They apply modern physical and chemical theory to the problem of life with the same standards of depth and rigor that are required in the treatment of purely physical and chemical problems. Perhaps I am permitted to generalize: Whether the approach to the problem of life is through physics, through chemistry, or through biology itself, the results are consistent—provided that the analysis is fundamental and thorough.

Perhaps the remedy for the declining fortunes of biology is now clear. Biologists should not regard chemistry or physics as a nemesis, but as an ally. If modern physical theory requires that epigenesis govern biological development, and if the cell theory can be deduced from physical chemistry, then physics and chemistry must be regarded as biology's most powerful friends.

If this mutual relationship is to bear fruit, there must be a true alliance between real sciences, rather than the creation of rootless hybrids. If we allow classical biology to decline, the full powers of modern physics and chemistry cannot be brought to bear on the study of life. I believe that in our university organization we must discover how to combine biology, chemistry, and physics in ways that will retain the integrity of each discipline.

A FINAL POINT IS IN ORDER, for the problem of the future of biology, however important to us, does not exist apart from the society in which we live. It appears to me that in the recent applications of science to social problems, there has been an increasing tendency to ignore the facts of life. Too often, we are prepared to expose miles of countryside to substances known chiefly for their power to kill. By the time we have dispersed insecticides, herbicides, fungicides, nematocides, pesticides, and other assorted agents, the adaptive latitude of the ecological environment, which is so vital to the success of plant, beast, and man, may have been fatally restricted. I sometimes think that the difficulties we now face in controlling water, air, and soil pollution, and the undue dissemination of radioactive materials, are the result of a common impression that "the boundary between life and non-life has all but disappeared." In fact, if we do not mend our ways, the statement may, after all, turn out to be true.

I believe that the time has come to restore the science of life. We need to do this for the sake of the science, and for the sake of that which is the goal of all science—the welfare of man.

By *SIEGFRIED REINHARDT*

Here, in pencil and prose, are an artist's impressions of an art school. The cover of this issue and the drawings on these pages were done especially for the Magazine by Siegfried Reinhardt, an instructor in the University's School of Fine Arts and a painter of international reputation. The accompanying text is the artist's own interpretation and amplification of his drawings.

Reinhardt has a bachelor of arts degree from the University, but no formal training in art. The self-taught Siegfried burst upon the artistic scene as a formidable *enfant terrible*. While still an undergraduate, he was having one-man shows and winning national prizes; while still in high school he became the youngest painter ever to have his work accepted by the St. Louis City Art Museum; when *Life Magazine* chose the nineteen best young artists in the country, he was the youngest of the nineteen.

Today, the former prodigy is a mature and established artist with dozens of shows and scores of prizes to his credit. He has had long and intimate association with the School of Fine Arts, its faculty, and its students. Here are his impressions.





it is / yet to be

FEEL UNS PAINT

Comedy and the
4th year
"Painters"
Siegfried Reinhardt
1961

Friedrich Reinhardt

The School of Fine Arts

In these graphic observations of the classroom activities in Bixby Hall, I have (somewhat satirically) attempted to reveal the fairly typical procedures of students at work. The students in these drawings are not necessarily attempts at portraiture (although, in a few instances, at least, this was inevitable), but rather a group of prototypes found on the premises of art schools generally. These types range from the bright, gifted, and enthusiastic student to the ones who should have become brush salesmen.

I have concentrated on the third- and fourth-year painting classes, poking a little fun at the student as well as at the instructor, revealing those idiosyncrasies and responses I have observed from teaching in the upper school for the past six years. These drawings are presented in the spirit of humor, and are not intended to be construed as personal, in-group, social commentaries, directed against special attitudes current in Bixby.

Conway and the fourth-year painting class . . .

In this drawing I have chosen to concentrate, in an exaggerated manner, of course, on the near "beatnik," "way-out" point of view adopted by a segment of the current class. With fervor, enthusiasm, and questionable "devotion," a group of fourth-year painting majors reflect the bizarre, anti-traditional, rebellious spirit extant in a vast segment of current painting. Anything goes, and the stranger the approach to the painting problem the greater the sense of elation.

The entire method is based on "feeling" and "self-expression" at the expense of craftsmanship and pictorial order. Conway, floating on an egg balloon, seems to have lost contact with this group, who, with special antennae and a conglomeration of anti-painterly paraphernalia, get their "messages" and "INspirations" from some remote source in "inner" space.



3rd year painting classes
and Osmer
Jeffrey Reinhardt
1961

Eigfried Reinhardt

Beaux-Arts Ball Queen
(Cover)

This famous annual Art School "brawl" is held at a different place every year. There is little that is sedate or conventional about this affair, and not infrequently the proprietors of the establishments where these affairs are held are not sure afterwards that they should have rented the place. The ball becomes fairly wild at a certain stage in its progress and, true to art student tradition, does not disappoint the outsider who has heard about the uninhibited nature of such affairs.

The "queen" in this drawing is no one specific, but again merely a prototype. The two images in the background represent the students who attend in costume related to one of the new themes established for the ball each year. The entire "blow-out" is a massive amount of fun if one does not resist its inevitable direction.

Osver and the third-year painting class . . .

Taking some satirical liberties here, I have attempted to convey in this drawing the seeming sense of clutter and congestion common to most painting classes. The clutter of easels, drawing stools, model stand, tables, still life objects, etc., and, finally, students themselves tends to reflect, especially to the lay person unfamiliar with such chaotic premises, total disorder, disunity, and a pedagogic hopelessness.

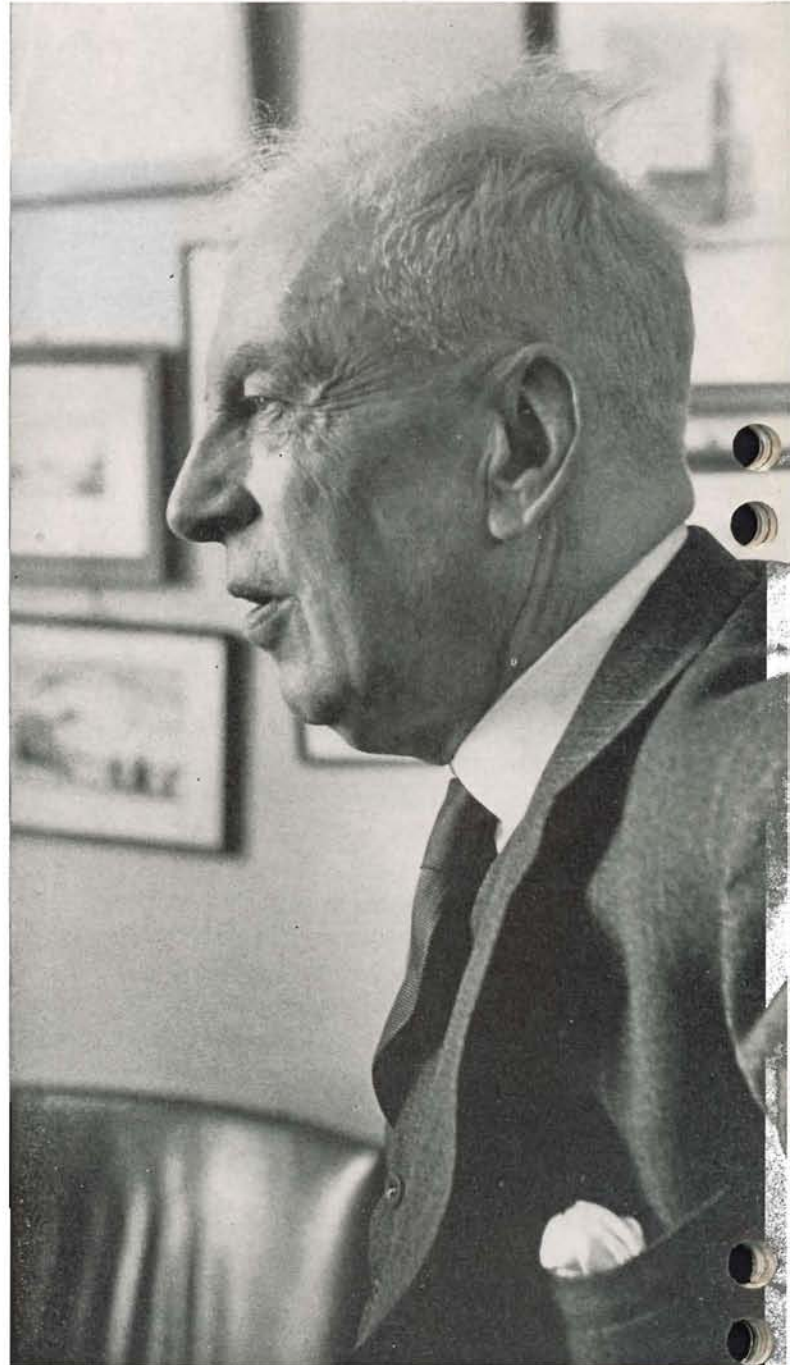
In spite of this impression, a great deal is accomplished in this "wilderness." Arthur Osver, third-year painting instructor, performs a little "health" ritual at about ten o'clock in the morning, eating a wedge of Camembert and an apple; hence the portrait of Arthur with ritualistic ingestibles. The head of the woman in the foreground, in a state of great elation, represents, by pictorial analogy, a group of older students (special students), primarily women, who, having raised families, return to the art school with a fantastic desire to paint and do so with unequalled fervor and determination. The remainder of the drawing reveals students in various states of reaction while at the easel.



"Animated Reactions—
Steinberg Hall"

Probably the world's best-known historian, Dr. Arnold Toynbee has written especially for university magazines on a topic integral to his theory of history—and to the future of America. His theory, advanced in his best-selling A Study of History, is that civilizations arise from a challenge and response. Progress and growth occur when the response to the challenge, which can be human or environmental, is successful. Part of that success is always due to leadership by a creative minority.

Professor Toynbee retired in 1955 as Director of Studies in the Royal Institute of International Affairs and Research Professor of International History in the University of London. His newest book is Reconsiderations, the twelfth volume of his famous A Study of History.



Has America Neglected Her Creative Minority?

AMERICA HAS BEEN MADE THE GREAT COUNTRY that she is by a series of creative minorities: the first settlers on the Atlantic seaboard, the founding fathers of the Republic, the pioneers who won the West. These successive sets of creative leaders differed, of course, very greatly in their backgrounds, outlooks, activities, and achievements; but they had one important quality in common: All of them were aristocrats.

They were aristocrats in virtue of their creative power, and not by any privilege of inheritance, though some of the founding fathers were aristocrats in conventional sense as well. Others among them, however, were middle-class professional men, and Franklin, who was the outstanding genius in this goodly company, was a self-made man. The truth is that the founding fathers' social origin is something of secondary importance. The common quality that distinguished them all and brought each of them to the front was their power of creative leadership.

In any human society at any time and place and at any stage of cultural development, there is presumably the same average percentage of potentially creative spirits. The question is always: Will this potentiality take effect? Whether a potentially creative minority is going to become an effectively creative one is, in every case, an open question.

The answer will depend on whether the minority is sufficiently in tune with the contemporary majority, and the majority with the minority, to establish understanding, confidence, and cooperation between them. The potential leaders cannot give a lead unless the rest of society is ready to follow it. Prophets who have been "without honour in their own country" because they have been "before their time" are no less well-known figures in history than prophets who have received a response that has made the fortune of their mission.

This means that effective acts of creation are the work of two parties, not just one. If the people have no vision, the prophet's genius, through no fault of the prophet's own, will be as barren as the talent that was wrapped in a napkin and buried in the earth. This means, in turn, that the people, as well as the prophet, have a responsible part to play. If it is incumbent on the prophet to deliver his message, it is no less incumbent on the people not to turn a deaf ear. It is even more incumbent on them not to make the spiritual climate of their society so adverse to creativity that the life will have been crushed out of

the prophet's potential message before he has had a chance of delivering it.

To give a fair chance to potential creativity is a matter of life and death for any society. This is all-important, because the outstanding creative ability of a fairly small percentage of the population is mankind's ultimate capital asset, and the only one with which Man has been endowed. The Creator has withheld from Man the shark's teeth, the bird's wings, the elephant's trunk, and the hound's or horse's racing feet. The creative power planted in a minority of mankind has to do duty for all the marvelous physical assets that are built into every specimen of Man's non-human fellow creatures. If society fails to make the most of this one human asset, or if, worse still, it perversely sets itself to stifle it, Man is throwing away his birthright of being the lord of creation and is condemning himself to be, instead, the least effective species on the face of this planet.

Whether potential creative ability is to take effect or not in a particular society is a question that will be determined by the character of that society's institutions, attitudes, and ideals. Potential creative ability can be stifled, stunted, and stultified by the prevalence in society of adverse attitudes of mind and habits of behavior. What treatment is creative ability receiving in our Western World, and particularly in America?

There are two present-day adverse forces that are conspicuously deadly to creativity. One of these is a wrong-headed conception of the function of democracy. The other is an excessive anxiety to conserve vested interests, especially the vested interest in acquired wealth.

What is the proper function of democracy? True democracy stands for giving an equal opportunity to individuals for developing their unequal capacities. In a democratic society which does give every individual his fair chance, it is obviously the outstandingly able individual's moral duty to make a return to society by using his unfettered ability in a public-spirited way and not just for selfish personal purposes. But society, on its side, has a moral duty to ensure that the individual's potential ability is given free play. If, on the contrary, society sets itself to neutralise outstanding ability, it will have failed in its duty to its members, and it will bring upon itself a retribution for which it will have only itself to blame. This is why the difference between a right and a wrong-headed interpreta-

tion of the requirements of democracy is a matter of crucial importance in the decision of a society's destiny.

There is at least one current notion about democracy that is wrong-headed to the point of being disastrously perverse. This perverse notion is that to have been born with an exceptionally large endowment of innate ability is tantamount to having committed a large pre-natal offence against society. It is looked upon as being an offence because, according to this wrong-headed view of democracy, inequalities of any and every kind are undemocratic. The gifted child is an offender, as well as the unscrupulous adult who has made a fortune at his neighbours' expense by taking some morally illegitimate economic advantage of them. All offenders, of every kind, against democracy must be put down indiscriminately, according to this misguided perversion of the true democratic faith.

There have been symptoms of this unfortunate attitude in the policy pursued by some of the local educational authorities in Britain since the Second World War. From their ultra-egalitarian point of view, the clever child is looked at askance as a kind of capitalist. His offence seems the more heinous because of his precocity, and the fact that the child's capital asset is his God-given ability and not any inherited or acquired hoard of material goods is not counted to him for righteousness. He possesses an advantage over his fellows, and this is enough to condemn him, without regard to the nature of the advantage that is in question.

It ought to be easier for American educational authorities to avoid making this intellectual and moral mistake, since in America capitalists are not disapproved of. If the child were a literal grown-up capitalist, taking advantage of an economic pull to beggar his neighbour, he would not only be tolerated but would probably also be admired, and public opinion would be reluctant to empower the authorities to curb his activities. Unfortunately for the able American child, "egg-head" is as damning a word in America as "capitalist" is in the British welfare state; and I suspect that the able child fares perhaps still worse in America than he does in Britain.

If the educational policy of the English-speaking countries does persist in this course, our prospects will be unpromising. The clever child is apt to be unpopular with his contemporaries anyway. His presence among them raises the sights for the standard of endeavour and achievement. This is, of course, one of the many useful services that the outstandingly able individual performs for his society at every stage of his career; but its usefulness will not appease the natural resentment of his duller or lazier neighbours. In so far as the public authorities intervene between the outstanding minority and the run-of-the-mill majority at the school age, they ought to make it their concern to protect the able child, not to penalise him. He is entitled to protection as a matter of sheer social justice; and to do him justice happens to be also in the public interest, because his ability is a public asset for the community as well as a private one for the child himself. The public authorities are therefore committing a two-fold breach of their public duty if, instead of fostering ability, they deliberately discourage it.

In a child, ability can be discouraged easily; for chil-

"If it is incumbent on the prophet to deliver his message, it is no less incumbent on the people not to turn a deaf ear."

dren are even more sensitive to hostile public opinion than adults are, and are even readier to purchase, at almost any price, the toleration that is an egalitarian-minded society's alluring reward for poor-spirited conformity. The price, however, is likely to be a prohibitively high one, not only for the frustrated individual himself but for his step-motherly society. Society will have put itself in danger, not just of throwing away a precious asset, but of saddling itself with a formidable liability. When creative ability is thwarted, it will not be extinguished; it is more likely to be given an anti-social turn. The frustrated able child is likely to grow up with a conscious or unconscious resentment against the society that has done him an irreparable injustice, and his repressed ability may be diverted from creation to retaliation. If and when this happens, it is likely to be a tragedy for the frustrated individual and for the repressive society alike. And it will have been the society, not the individual, that has been to blame for this obstruction of God's or Nature's purpose.

This educational tragedy is an unnecessary one. It is shown to be unnecessary by the example of countries in whose educational system outstanding ability is honoured, encouraged, and aided. This roll of honour includes countries with the most diverse social and cultural traditions. Scotland, Germany, and Confucian China all stand high on the list. I should guess that Communist China has remained true to pre-Communist Chinese tradition on this all-important point. I should also guess that Communist Russia has maintained those high Continental European standards of education that pre-Communist Russia acquired from Germany and France after Peter the Great had opened Russia's doors to an influx of Western civilization.

A contemporary instance of enthusiasm for giving ability its chance is presented by present-day Indonesia. Here is a relatively poor and ill-equipped country that is making heroic efforts to develop education. This spirit will put to shame a visitor to Indonesia from most English-speaking countries except, perhaps, Scotland. This shame ought to inspire us to make at least as good a use of our far greater educational facilities.

If a misguided egalitarianism is one of the present-day menaces in most English-speaking countries to the fostering of creative ability, another menace to this is a benighted conservatism. Creation is a disturbing force in society because it is a constructive one. It upsets the old

order in the act of building a new one. This activity is salutary for society. It is, indeed, essential for the maintenance of society's health; for the one thing that is certain about human affairs is that they are perpetually on the move, and the work of creative spirits is what gives society a chance of directing its inevitable movement along constructive instead of destructive lines. A creative spirit works like yeast in dough. But this valuable social service is condemned as high treason in a society where the powers that be have set themselves to stop life's tide from flowing.

This enterprise is fore-doomed to failure. The classic illustration of this historical truth is the internal social history of Japan during her 200 years and more of self-imposed insulation from the rest of the world. The regime in Japan that initiated and maintained this policy did all that a combination of ingenuity with ruthlessness could do to keep Japanese life frozen in every field of activity. In Japan under this dispensation, the penalty for most kinds of creativity was death. Yet the experience of two centuries demonstrated that this policy was inherently incapable of succeeding. Long before Commodore Perry first cast anchor in Yedo Bay, an immense internal revolution had taken place in the mobile depths of Japanese life below the frozen surface. Wealth, and with it the reality of power, had flowed irresistibly from the pockets of the feudal lords and their retainers into the pockets of the unobtrusive but irrepressible business men. There would surely have been a social revolution in Japan before the end of the nineteenth century, even if the West had never rapped upon her door.

The Tokugawa regime in Japan might possibly have saved itself by mending its ways in good time if it had ever heard of King Canute's ocular demonstration of the impossibility of stopping the tide by uttering a word of command. In present-day America the story is familiar, and it would profit her now to take it to heart.

In present-day America, so it looks to me, the affluent majority is striving desperately to arrest the irresistible tide of change. It is attempting this impossible task because it is bent on conserving the social and economic system under which this comfortable affluence has been acquired. With this unattainable aim in view, American public opinion today is putting an enormously high premium on social conformity; and this attempt to standard-

"True democracy stands for giving an equal opportunity to individuals for developing their unequal capacities."

ise people's behaviour in adult life is as discouraging to creative ability and initiative as the educational policy of egalitarianism in childhood.

Egalitarianism and conservatism work together against creativity, and, in combination, they mount up to a formidable repressive force. Among American critics of the present-day American way of life, it is a commonplace nowadays to lament that the conventionally approved career for an American born into the affluent majority of the American people is to make money as the employee of a business corporation within the rigid framework of the existing social and economic order. This dismal picture has been painted so brilliantly by American hands that a foreign observer has nothing to add to it.

The foreign observer will, however, join the chorus of American critics in testifying that this is not the kind of attitude and ideal that America needs in her present crisis. If this new concept of Americanism were the true one, the pioneers, the founding fathers, and the original settlers would all deserve to be prosecuted and condemned posthumously by the Congressional committee on un-American activities.

The alternative possibility is that the new concept stands condemned in the light of the historic one; and this is surely the truth. America rose to greatness as a revolutionary community, following the lead of creative leaders who welcomed and initiated timely and constructive changes, instead of wincing at the prospect of them. In the course of not quite two centuries, the American Revolution has become world-wide. The shot fired in April 1775 has been "heard around the world" with a vengeance. It has waked up the whole human race. The Revolution is proceeding on a world-wide scale today, and a revolutionary world-leadership is what is now needed.

It is ironic and tragic that, in an age in which the whole world has come to be inspired by the original and authentic spirit of Americanism, America herself should have turned her back on this and should have become the arch-conservative power in the world after having made history as the arch-revolutionary one.

What America surely needs now is a return to those original ideals that have been the source of her greatness. The ideals of "the organisation man" would have been abhorrent to the original settlers, the founding fathers, and the pioneers alike. The economic goal proposed in the Virginia Declaration of Rights is not "affluence"; it is "frugality." The pioneers were not primarily concerned with money-making; if they had been, they could never have achieved what they did. America's need, and the world's need, today, is a new burst of American pioneering, and this time not just within the confines of a single continent but all round the globe.

America's manifest destiny in the next chapter of her history is to help the indigent majority of mankind to struggle upwards towards a better life than it has ever dreamed of in the past. The spirit that is needed for embarking on this mission is the spirit of the nineteenth-century American Christian missionaries. If this spirit is to prevail, America must treasure and foster all the creative ability that she has in her.



Intramurals

At Washington University, intramural sports draw big crowds. The teams are good, the competition fierce, the play exciting. Judging from these pictures, however, it is not the sports spectacle alone that draws the crowds to the intramural fields. The games provide an excellent opportunity to meet new friends, to renew acquaintances, and to catch up on the latest campus news.



The rapid shift in the composition of the student body at Washington University in recent years has also aroused greater interest in intramural sports. Back in the days when most students were riding streetcars, attendance wasn't so good. After all, a man could miss three or four University cars, to say nothing of a Clayton 04 or two, while waiting for a field goal try.

Today, with so many students living on campus, intramural sports are gaining in popularity every year. They provide an exciting and interesting interlude between classes and study and, again as these pictures show, a great opportunity to meet your friends.

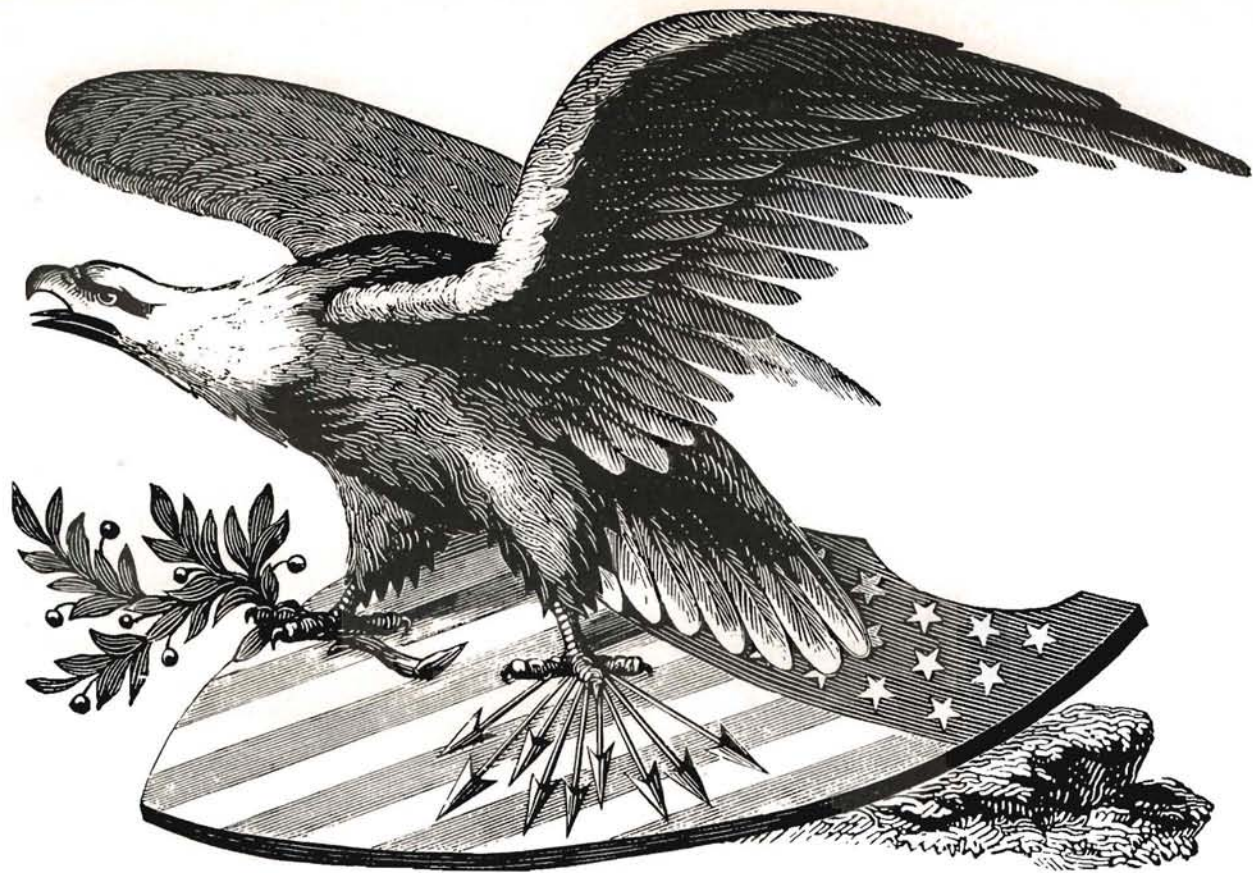


By WILLIAM N. CHAMBERS
Professor of Political Science

A M E R I C A N P A R T I E S
A N D T H E
V I O L E N C E O F F A C T I O N

Some explanation of what happens to parties in their times of troubles may help us understand the phenomenon of American parties in general. . . .

Without parties, our politics would remain a kaleidoscopic flux of groups and factions.



CRITICS HAVE COMPLAINED REPEATEDLY that American political parties are excessively heterogeneous, vague in their platform positions, and ill-disciplined—and therefore unable to take unified stands on public policy and unable to carry policy positions into effect in office. They call for more cohesive and meaningful parties.

Defenders have argued that a loose-jointed, free-wheeling party politics is a virtue in the American context. They claim that heterogeneous parties “fit” the variety of American life and express effectively the diversity of views of different groups and sections in the nation. They argue also that such parties are consistent with American individualistic values.

Questions about the state of our parties may seem particularly crucial in a period of political change—when the Democrats and President Kennedy have proclaimed to the voters a “New Frontier” in national policy, and yet are often unsure as to whether they can mobilize their sizable majorities in Congress for key party measures; or when Republicans are torn as to whether they should follow Eisenhower-Nixon “Moderates,” Rockefeller “Liberals,” or Goldwater “Conservatives.”

In a sense, both critics and apologists are right. And yet, both are wrong. As the discussion unwinds, on the popular level at least, it usually turns out that each

disputant has hold of only a part of the complex leviathan which is a political party. A closer, analytical look at the development of parties and party functions may reveal deeper forces and help elucidate the problem.

A persistent fact of American politics is the phenomenon of pluralism. Ours has been a highly pluralistic society, embracing an immense variety of economic groups, ethnic or religious contrasts, regional and sectional attachments, rural-urban divisions, differences of outlook and opinion, and loyalties to different leaders. As James Madison put it in *The Federalist*, such differences are inevitable in a complex society. But the conflicts they generate may erupt into the galloping disorder which he called “the violence of faction” unless they are somehow moderated. Indeed, early American politics in the days before political parties was generally a frenetic game in which multiple factions jockeyed for power in a confusion bordering on chaos. Voters were repeatedly frustrated in the effort to exercise democratic choice, because they could not be sure from time to time of what group stood for what, or what leaders they might hold responsible for what public policies. Policy-making itself often exhibited a zigzag character as it responded to shifting pressures from varieties of contending groups.

Set against the indigenous forces of pluralism we may

discern also concerns for some democratic check on the actions of government, and for some consistency or coherence in policy. Such concerns become more pressing as the society becomes more intricate and inter-dependent in the twentieth century and as the nation faces an explosive world situation in which survival itself is a question.

HISTORICALLY AMERICAN POLITICAL PARTIES have not only expressed the cross-currents of pluralism but have also served countervailing concerns for policy coherence and democratic control. Our parties have been complex political formations representing a variety of groups and depending upon them for their success. They have also exhibited aspects of structure and function which have enabled them to moderate the forces of pluralism; to provide a stable link between electoral choices and the decisions that are made in government; and to introduce some policy coherence. Without parties, our politics would remain a kaleidoscopic flux of groups and factions, of the sort observable before the establishment of national parties in the 1790's, or in certain Southern or other one-party states today. Yet the dual role of our parties in expressing and at the same time harnessing pluralism has entailed serious problems for the parties themselves.

These involve the interplay of what we may call centrifugal and centripetal forces *within* parties. If centrifugal strains overbalance centripetal forces for cohesion, parties at best will find great difficulty in performing their democratic and ordering functions. At worst they will face disintegration or disruption. Even when a reasonable balance of divisive and cohesive forces exists, our parties have regularly suffered from a considerable degree of *internal* factionalism.

The history of American parties reveals how perilous the situation can be. In the last century we have become accustomed to a stable rivalry of Democrats and Republicans in a dualistic party system against which third parties periodically beat themselves to death, and in which voters have a continuing, relatively clear, either-or choice. The story is different if we review it from the founding of the Federalist party by Alexander Hamilton or of the first Republican party by the industrious Madison and the pragmatic-visionary Thomas Jefferson in the 1790's, down to the crisis of parties on the eve of the Civil War in the 1850's. These seven decades saw the rise and fall of no less than six major national parties.

THE FIRST TO GO UNDER was the Federalist party. During Washington's presidency it provided political energies to stabilize the nation and to carry through the brilliant Hamilton's bold program to convert that nation from an agrarian Arcadia to a system of government-promoted capitalist enterprise. After its defeat in the elections of 1800, however, the Federalist party waned, until sometime between 1816 and 1820 it disappeared from the national political arena. The field was left to Jeffersonian-Republican dominance.

Yet the successful Republican party itself soon found it impossible to contain an ever-broadening combination of

groups in a cohesive structure and suffered in its turn a process of political fission which destroyed it as a going concern by the time of the Missouri Compromise of 1819-1820. It was a decade before a new alignment of forces, cohering around the commanding figure of Andrew Jackson, finally emerged as the new Democratic party.

Third on the scene was the National Republican party, a short-lived coalition led by John Quincy Adams and Henry Clay. Barely a party when Adams lost the presidential election to Jackson in 1828, it made its last stand in the presidential arena in 1832 when Clay lost a second time to Old Hickory. By 1834 it had given way to the Whig party.

The Whigs enjoyed a relatively long but frustrating life. They won only two presidential elections in 20 years—in 1840 when "Tippecanoe and Tyler Too" bested "Van, Van, the Used-Up Man" (Martin Van Buren), and in 1848 when another military hero, Zachary Taylor, rode in on a Democratic split. Nonetheless, the Whig party assembled a broad combination of groups as a power base and remained a serious contender until the mid-1850's, when the portentous slavery extension issue triggered its fission. Like the first Republican party, it was unable to contain internal strains of conflicting interests and opinions.

In the 1850's a fifth national party, the American or "Know-Nothing" party, launched a career of attacks on immigrants and Roman Catholics in lieu of facing the thorny slavery extension issue. Its life was extremely short, however, and by about 1856 it had gone out of business.

Finally, there is the travail of the dominant Democratic party in the two decades of the slavery controversy before 1860. Despite internal stresses it managed to hold together until that fateful year. Then, under the impact of irreconcilable Southern demands, it broke into Northern and Southern wings, each running presidential candidates—Stephen A. Douglas and John C. Breckinridge. The disruption of the Democrats as a force for national accommodation was the ominous prelude to the resort to arms, and the party was able to reunite only after the Civil War.

This story of the birth, crises, and death of parties stands in sharp contrast to the stability of our present "Hundred Year System." Some explanation of what happens to parties in their times of troubles may help us understand the phenomenon of American parties in general. The most re-

"Early American politics in the days before political parties was generally a frenetic game in which multiple factions jockeyed for power in a confusion bordering on chaos."

"Historically American political parties have not only expressed the cross-currents of pluralism but have also served countervailing concerns for policy coherence and democratic control."

vealing instances are the disintegration of the Jeffersonian Republicans and the disruption of the Democrats.

THE FIRST REPUBLICAN FISSION occurred in the years 1809-1820. With the attrition of the Federalist party, more and more groups, sections, and leaders turned to the Republicans; and with advancing settlement in the trans-Allegheny New West in the early 1800's, the party combination had to be broadened still further to include these fresh, untamed elements. Ironically, Madison as President and party leader faced from the outset of his administration in 1809 what he had 20 years earlier scourged as "the violence of faction." It grew more severe as he and other leaders found it increasingly difficult to evolve a basis of agreement among the disparate forces in the expanding party coalition. Uncertainty in policy, submission to factional demands, avoiding party stands became the order of politics—and coherence and democratic control suffered, as the originally liberal-agrarian party of Jefferson ingested more and more neo-Hamiltonian policies. Yet the fissionable forces were not subdued, and the party was further strained by hurly-burly internal scrambles for power, prestige, and patronage. It soon became apparent that Madison, and even more his successor after 1817, James Monroe, lacked the will or strength of leadership, the skills of intra-party diplomacy, or the popular appeal necessary to maintain party cohesion. In addition, the first Republicans were hampered by the absence of effective organization as an instrument to moderate internal conflict. Finally, with attitudes of party attachment already in decline, Monroe deprecated the very idea of party and thereby further weakened emotional identifications with the Republican standard as a cohesive element.

Thus the floodgates were opened to the destructive currents of pluralism, and the moderating forces of party action were washed away. Within a few short years after Jefferson left the presidency, his party had suffered disintegration.

THE STORY OF THE DEMOCRATS in the 1840's and 1850's presents some instructive contrasts. The Democrats also had put together a broad combination of many groups, and the issue of slavery extension and its implications was more menacing than any the first Republicans had faced. Intense conflicts of interest and opinion within the

party produced sharp factionalism, which before long came to basic questions of the future of the society—whether it was to be free or slave—and the future of the polity—whether it was to remain as a national union. Intra-party rivalry for power, places of prominence, and patronage also threatened the Democrats.

Unlike the first Republicans, however, the Democrats were able for some time to sustain a sense of party attachment and *élan*. This rested partly on emotional loyalties to "the party of Jackson" and partly on practical stakes in the "Democracy" as a successful vote-winning and patronage-supplying symbol and political firm. The Democrats in the 1830's and 1840's had also developed effective organization which helped to hold the party together, and the handling of patronage was adroit at least as often as it was inept. Finally, the Democrats found a supply of leaders such as the compulsively hard-working James K. Polk and the adept, resourceful "Little Giant" Douglas who were able again and again to devise workable intra-party compromises—although the "Democracy" also had its share of near-ciphers and blunderers. Thus, though the forces of pluralism beat mercilessly upon the Democratic bastion, the party withstood them for a remarkably long time. Ultimately, however, the division of North and South—the conflict of interests, ideologies, and systems—grew too strong even for the Democrats. A year before James Buchanan completed his term as the last, ineffectual antebellum Democratic President, the party suffered the schism of 1860.

ON THE BASIS OF HISTORICAL ANALYSIS of the sort sketched here, it is possible to identify three standard centrifugal forces making for division within parties and four potential centripetal forces making for cohesion. The *balance* of centrifugal and centripetal forces within a party determines whether it will give way to the forces of raw pluralism and faction or maintain itself as an instrument for coherence and democratic control. These forces operate in the age of Eisenhower and Kennedy as they did in the eras of Monroe and Buchanan.

The centrifugal strains are built into the nature of major parties in a pluralistic society. The first such force lies in the tensions engendered in a broad range of conflicting groups or bodies of opinion in the party combination—and, in some cases, in additional tensions which come with increases in the range and variety of the coalition which a period of party dominance may bring. A second divisive force is the development, particularly within a successful party, of rivalries for the prime goods of political life such as power, places in office, prestige, and patronage. A third, enervating force lies in a tendency, as a party matures and embraces a wider variety of loosely attached and often dissonant elements, toward reduced intensity of partisan faiths, loyalties, or commitments—in short, a weakening of distinctively party ties and of partisan *élan*.

The operation of possible centripetal forces is not "given," but depends on the purpose and energies of men in the party. The first such force we may call intra-party concordance of policy positions and ideology. Concordance must usually be painstakingly built by devising formulas

of agreement so that satisfaction is maximized (and conflict is minimized) among the groups in the party combination, or by arousing new policy attitudes or enthusiasms in the party following—as, for example, Douglas's adept political brokerage or Jackson's dramatic appeals. The second and third possible centripetal forces are closely linked. They are the development of a high degree of organization, which may serve as an instrument for moderating conflict within the party and for maintaining discipline and loyalty, and a reasonably efficacious use of patronage as a means of reward, recruitment, or punishment toward sustaining and unifying the party.

Finally there is a fourth, crucial element. This is a supply of effective party leaders, who can stimulate partisan loyalties and activity, devise workable inter-group formulas of agreement, and appeal to mass sentiments and opinion.

Most of these forces, centrifugal and centripetal, were operative in one complex or another in the death-throes of parties enumerated here. Their relative balance in the first Republican as compared with the later Democratic party provides some explanation for the speedy demise of the Republicans as contrasted with the greater staying-power of the Democrats. Centrifugal forces ran strong in both instances, and even stronger against the Democrats—but the Democrats were able to muster a more powerful array of centripetal forces than the first Republicans were able to generate. Thus they staved off disruption for a longer time, even in a more threatening situation.

The idea of the balance of centrifugal and centripetal forces points to underlying aspects of American party politics as they relate to the problems of pluralism, of coherence in policy making, and of democratic control—in our own day as well as in earlier times.

There is no reason to assume that our present parties are on the brink of disintegration. Yet the standard centrifugal forces continue to operate and may help explain some of the characteristics of modern Democrats and Republicans—their looseness, their continuing factionalism, their tendency to some incoherence in their address to policy, and their lack of discipline. To the more extreme critics of our parties, we may say that it is naive in the face of American pluralism to expect parties which are highly unified, highly coherent on policy, and strongly disciplined. Pluralistic strains are particularly likely to characterize parties in Congress, whose members feel the often-conflicting pressures of their 535 state or local constituencies.

OUR PARTIES TODAY, as they continue to rest on heterogeneous group combinations, are bound to live with the stress of centrifugal forces. For the Democrats, this means that their liberal Presidential wing will continue to face difficulties with their conservative Congressional faction and its Southern hard core. Alliances of conservative Democrats with the bulk of Republicans, complicated on the school issue by dissident Catholic demands which are strong in Democratic ranks, may well block key measures such as aid to public education or medical care legislation in the 1962 session of Congress, or

"There is room in our parties today to strengthen centripetal forces toward greater policy coherence and clarity of democratic choice."

even prevent their coming to the floor—despite promises to the voters in the party's 1960 platform. For the Republicans, centrifugal forces probably mean continuing contention between liberal, conservative, and moderate factions. The need to shape a broad combination for presidential elections probably also means that not even Goldwater, much less the resurgent "Radical Right," can shape the party in their image. Extreme commitments would alienate too many segments of the electorate which the Republicans must enlist if they are to return to power. Nor is there much likelihood now of a liberal-versus-conservative general realignment of parties, despite some Republican inroads in the unsolid South. The old parties have shown too much skill in managing the variety of pluralism, and there is too much at stake for them and for their various local leaders, to make it likely that they will fail to contain contemporary currents.

To apologists for the looseness of our parties, we may say that divisive tendencies in a party vary not only with the inherent centrifugal forces, but with the degree to which possible centripetal forces are generated. If no centripetal forces operated, our present parties would disintegrate as others have before them. Historically, the balance of centrifugal and centripetal forces in particular parties has shifted. There is some, if not unlimited, room in our parties today to strengthen centripetal forces, especially in leadership and the mobilization of popular enthusiasm, toward greater policy coherence and clarity of democratic choice. What may be accomplished depends on the purpose and energies of major leaders and thousands of party activists across the nation.

THUS KENNEDY AND HIS AIDES might undertake—and succeed at—an essay in presidential opinion and party leadership effective enough to carry much more of his promised New Frontier. If he fails in the present session he might win in the next—especially if he and his party allies could stir public opinion and party action sufficiently in the November elections to regain most or all of the 21 House seats liberal Northern Democrats lost to the Republicans in 1960. Historically, vigorous presidential action has often been a vital center for centripetal party forces.

Yet the newest and youngest of our presidential party leaders will—like other men before him—have to conjure with the balance of forces in his party. There is no guarantee of the ultimate result.

Editor's Note: Miss Clapperton's article appeared originally in the February 1, 1961, issue of Punch, the noted British humor magazine, and is reproduced here with the kind permission of that distinguished publication. In all fairness to Edward Ernhart, whose work inspired the Punch article, we felt that he should have an opportunity to say something in his own defense. Here are his comments:

"Gratifying though it is to have been awarded the doctorate by so splendid an institution as Punch, I should nevertheless like to reassure my committee that, to the best of my knowledge, I am still a candidate for the Ph.D. in the Psychology Department at Washington University and that the research to which Miss Clapperton alludes is one of several studies which, hopefully, will constitute my dissertation.

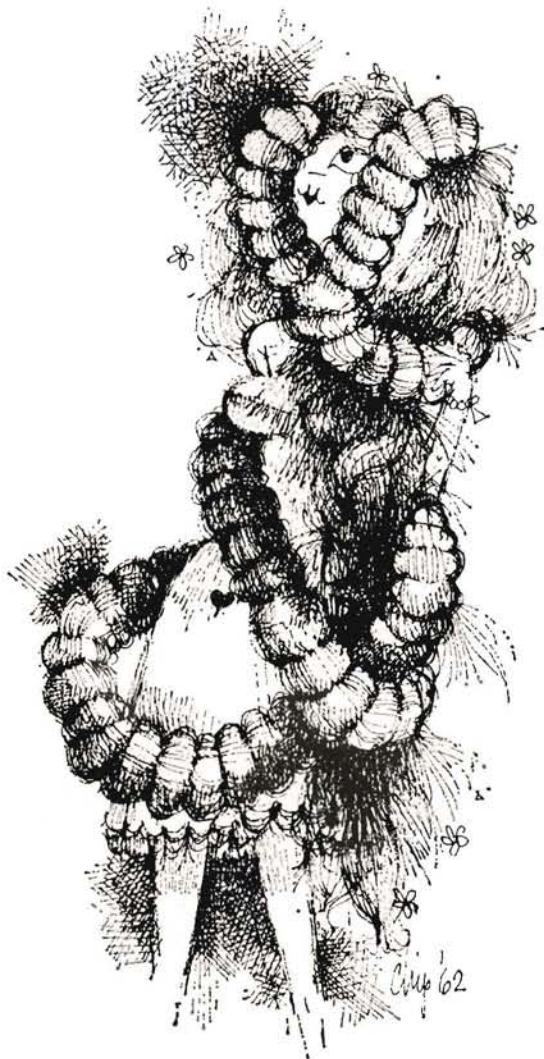
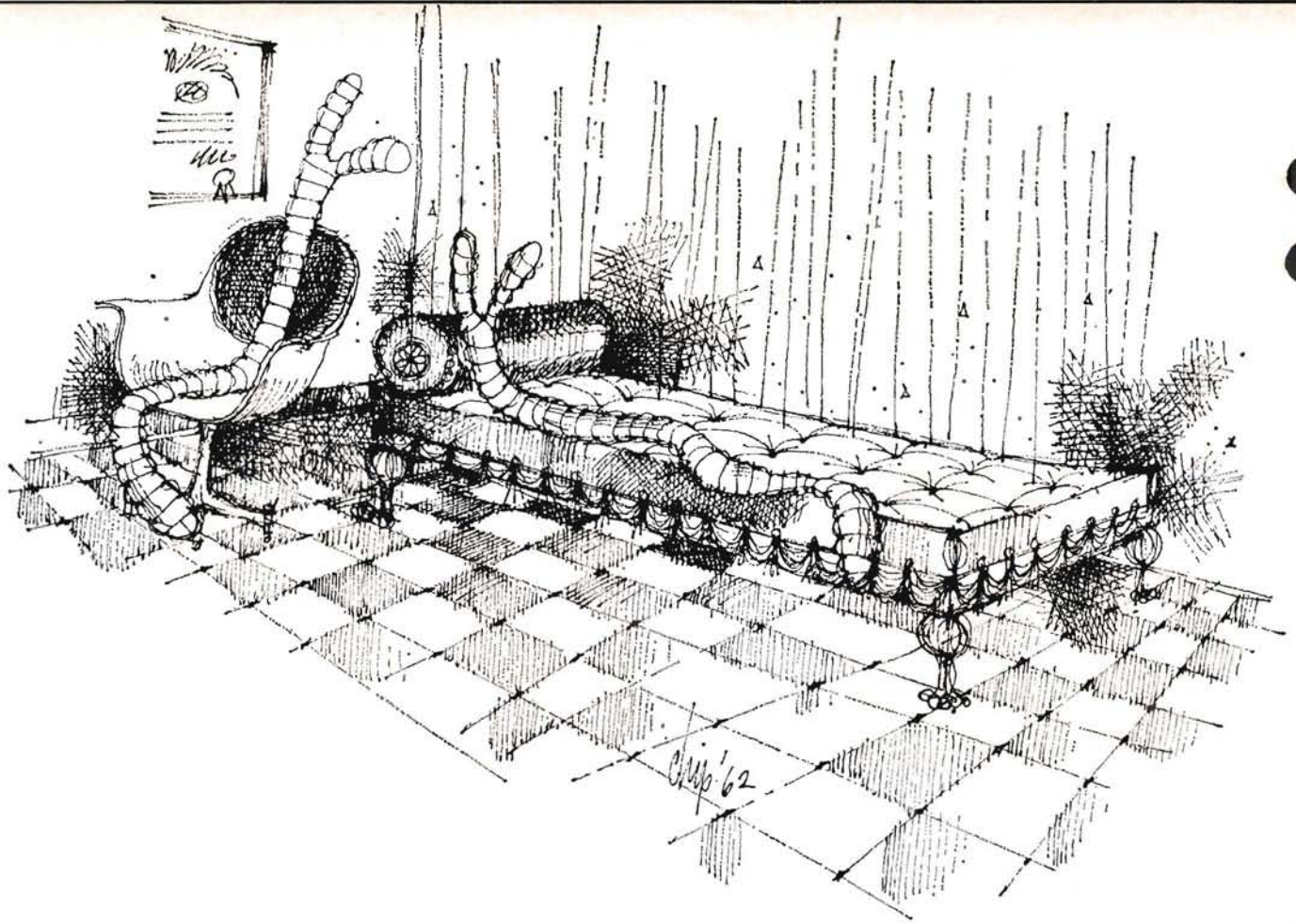
"In addition, I should like to point out, if only before someone else does, that the procedure for developing two-headed planaria was not original with me; in fact, I first encountered it in Professor Viktor Hamburger's admirable Manual of Experimental Embryology. My contribution, if such it be, was to compare the rapidity of learning of two-headed planaria with that of the more conventional single-headed variety. J. S. Mill must remain, for the time being at least, a project for the future."

POLITIC WORMS

By JANE CLAPPERTON



ACCORDING TO THE *Worm Runners' Digest* (and let's have no giggling at the back there, please; this is a serious subject) experiments are now, right this minute, going forward at Washington University, St. Louis, that are enough to curl your hair. It seems that Washington University has a Dr. Edward Ernhart on its staff, and this Dr. Ernhart has made the fairly unattractive discovery that by splitting a worm's head down the middle you get not only, as you might expect, a maladjusted and potentially delinquent worm with a grudge against society in general and Dr. Ernhart in particular but a worm with



two heads. (Dr. Ernhart doesn't actually say his patients are maladjusted after treatment but it seems a fair bet.) Furthermore this two-headed worm reacts more rapidly to electric shock-light stimulus than do the obsolescent Mark I worms with only one head. So there.

The deeper implications of all this only begin to writhe to the surface when we see the *Daily Telegraph*, whence comes this awesome bulletin, describes the *Worm Runners' Digest* as a publication dealing with "studies started to find out if worms could be taught anything." Clearly there is more involved here than just good old Dr. Ernhart sitting up late at night with a candle, a couple of dry batteries and an old razor blade, chuckling to himself I have no doubt, while the pitiful mewling of timorous non-progressive worms rings unheeded in his ears. There must be an awful lot of people engaged in the higher education of worms if they need a whole publication to themselves. The majority are doubtless decent, sober family men, alive to their responsibilities and even kind, in a clinical sort of way, to the defenceless creatures whose fate lies in their hands; but one cannot help wondering how many unscrupulous worm runners have secretly progressed far beyond such baby stuff as electric shock stimulus, and are already cramming their exhausted charges with Beowulf and simple calculus until the poor overtaxed little brains are fairly reeling.

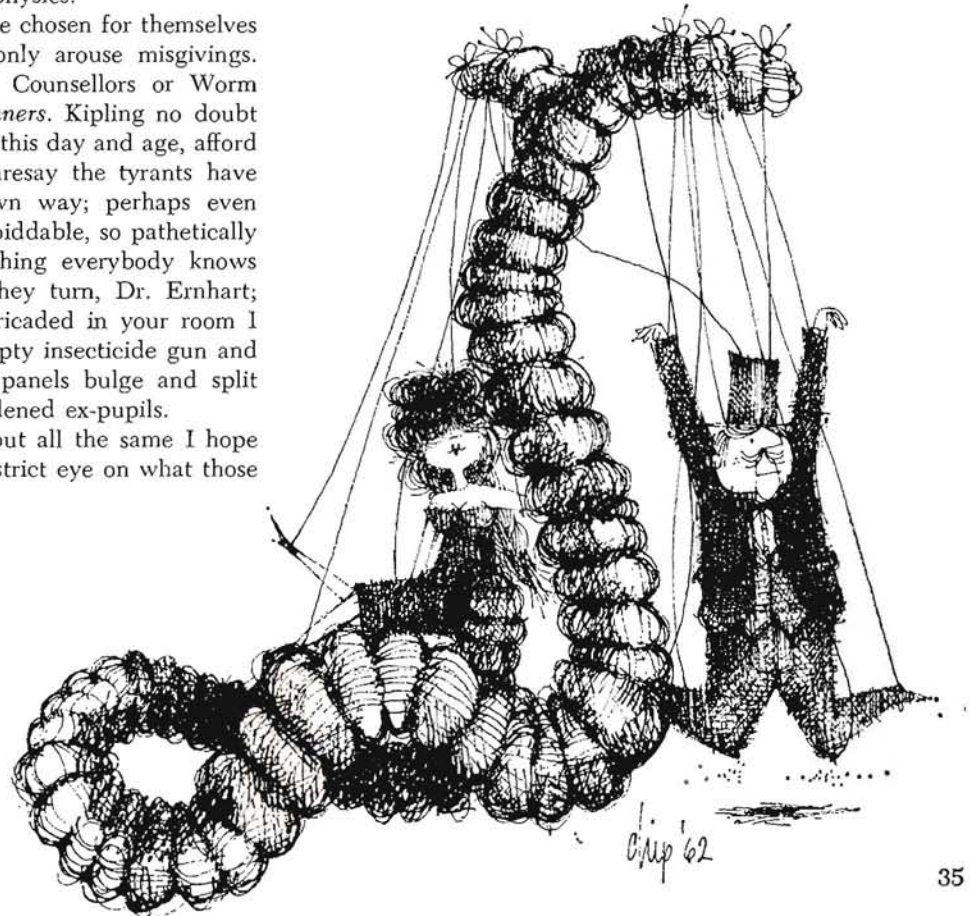
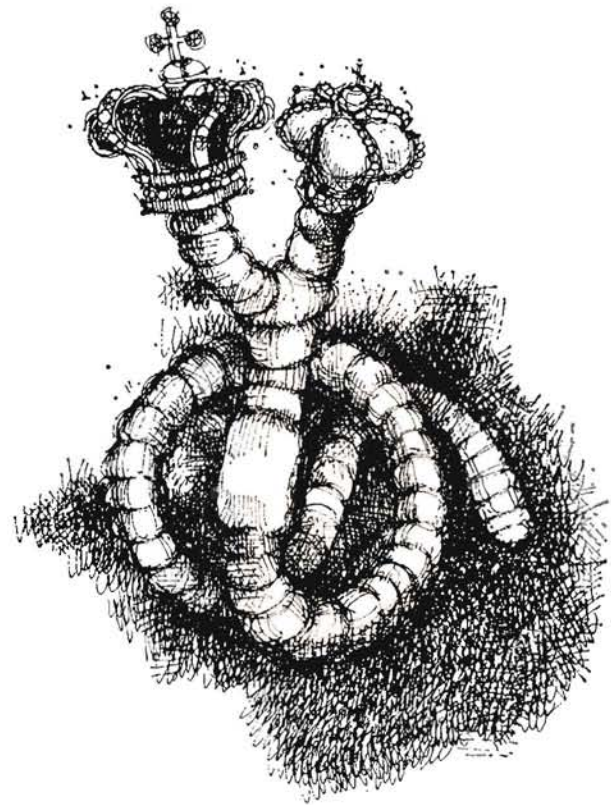
That dear old cosy the Mad Scientist, who crops up in the pages of extravert fiction with the persistence of a recurring decimal, has always been a favourite of mine, but it's a little disquieting to find nature copying art again

and coming up with the worm runners. (I see them, Dr. Ernhart and his cabala, as slightly-built fanatics with *crème pistache* complexions and a bit of a twitch; in fact, now I come to think of it, closely resembling Alec Guinness in *The Ladykillers*. But then all Mad Scientists look like Alec Guinness in *The Ladykillers*—it was what you might call the definitive portrayal.) I admit a two-headed worm looks a shade puny beside man-eating giant crabs, carnivorous lichens quivering in the crypt, and ravening homunculi in pickle-bottles; but I suppose Dr. Ernhart had to start somewhere.

Personally I have the gravest doubts about whether he should have started at all. It's not that I'm against worm education as such, and if there were one shred of evidence that this is what the worms themselves really want I should be the last to stand in their way; though what good a great horde of half-taught, disaffected, and probably downright subversive worms is going to be, lurching about the countryside leaving anarchy and red ruin in its wake I do *not* know. But what I would ask Dr. Ernhart, in the sacred name of civilization and the future of the Race, is: What are these worms going to learn? To the more archaic technical skills—pottery, handweaving, simple village crafts of that sort—there would seem to be no objection; low-grade factory work is also a possibility, though precautions must be taken to ensure that no human artisan is deprived of his livelihood by avaricious employers cashing in on cheap worm labour. But can we be sure that it will end there? Once let those worms get started on political economy, and insurrection is only a matter of time; a couple of pages of John Stuart Mill and the jig is up. To say nothing of nuclear physics.

The very name these people have chosen for themselves implies an arrogance which can only arouse misgivings. Not Worm Watchers, not Worm Counsellors or Worm Guidance Officers, but *Worm Runners*. Kipling no doubt would have applauded; can we, in this day and age, afford to do the same? Up to now I daresay the tyrants have had things pretty much their own way; perhaps even jeered at their slaves for being so biddable, so pathetically anxious to please. But the one thing everybody knows about worms is that they turn; they turn, Dr. Ernhart; and where will you be then? Barricaded in your room I shouldn't wonder, clutching an empty insecticide gun and cringing with terror as the door panels bulge and split before the onslaught of your maddened ex-pupils.

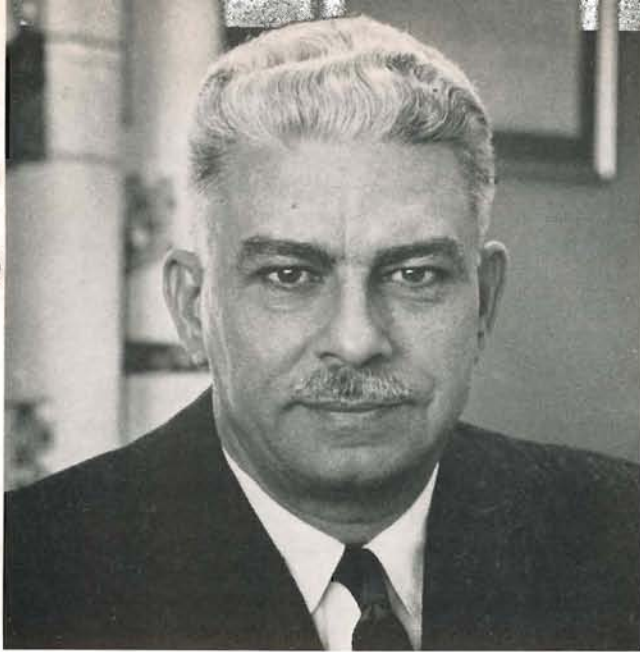
Probably it's too late by now, but all the same I hope somebody is keeping a very, very strict eye on what those worms are reading.



AS EUROPEANS

SEE US

The Dean of Washington University's School of Business and Public Administration spent last year in Western Europe as a consultant to the European Productivity Agency, of the Organization for European Economic Cooperation. At the first Washington University Association lecture this fall, Dean Trump gave his impressions not only of what he thought of the Europeans, but also of what the Europeans think of us. This article is adapted from his lecture.



By ROSS M. TRUMP
*Dean of the School of Business
and Public Administration*

HOW EUROPEANS SEE US depends upon a number of factors. One is which European country we're talking about, because they do not all view us in a similar fashion. It might be which class of Europeans, because if we're talking about the man in the street, he has one idea; if we're talking about a member of the well-educated upper classes, he may have a very different idea.

How any European sees us is colored somewhat by the changes which have occurred in Europe in the last ten years or so, because Europe has undergone a rather fantastic change in that time. At the end of the war, Europe was a shambles: The factories were gone; the cities were destroyed; the economy was in a chaotic state. I am sure there were many persons, both European and American, who had little hope that Europe could come back. This had been the second disastrous war within a very short period, and the destruction was nearly complete.

The turning point perhaps came in early 1948, when Secretary of State Marshall announced The Marshall Plan of aid for Europe, saying with great wisdom, "This will not be on a country-by-country basis. It must be aid to all of Europe, and all of Europe must get together to determine needs and priorities." The result of this activity was the Organization for European Economic Cooperation.

The O.E.E.C. managed to bring the various countries of Europe together to discuss common needs and common problems. Out of it grew a spirit of cooperation which no one could have predicted. The organization accomplished several very significant things. One of them was to eliminate the hundred-year-old squabble between France and Germany over the Ruhr Valley and to substitute the Schumann Plan, whereby France and Germany share these facilities on a joint basis.

Some time later another cooperative plan which has very great significance developed: European Economic Community, or the Common Market, uniting France, West Germany, Italy, Belgium, the Netherlands, and Luxembourg economically. It was the intention of the people who organized the Common Market that these countries should

develop first an economic basis for cooperation, then an actual political federation.

The initial step would be the abolition of tariffs among the six various countries over a 15-year period. The group made such a good start that the period for lowering tariffs was reduced to 12 years. Now there is even talk of eliminating them completely within eight years. The Common Market, in operation about four years, has been phenomenally successful. The general prosperity of Europe is striking to anyone who has been there recently.

Economic conditions of the European countries vary, of course, as do their political situations. You've read, I am sure, of DeGaulle's being granted powers which are unprecedented in French history. The French do not make such a decision lightly; in fact, they don't make any decisions lightly. The result, however, has been that the French have never had it so good. Unemployment is almost unknown. The average French workman enjoys a better income and better purchasing power than he has had since before the war, and the chaotic political situation has been stabilized.

IN GERMANY THERE ARE an estimated 500,000 jobs unfilled. This is why East Germany has sealed the escape route to the West: An estimated one-fourth of the entire population of East Germany had escaped. Had this continued much longer, East Germany would have become the largest pastureland in Europe—no people there at all. The exodus was even worse for the Communists because the people leaving were the young ones, the technically educated, the engineers, the people who were most employable. They left with no trepidation because they knew they could be immediately employed in West Germany.

In late July I saw in the railroad station in Nuremberg groups of Spanish and Italian workers, imported by West Germany to help meet the demand for construction workers. Spain is still a beautiful country, as it has been for many centuries. But it can supply workers to Germany because it has not much more industry than it had years ago.

However, Spain is planning for the future, and I think it significant that it has two top-flight postgraduate business schools with well-trained faculties and alert, eager students.

The Scandinavian countries are doing well and have been ever since the war. They're not doing as well as West Germany, but very few places are. In West Germany, the industrial plants were leveled in the war. With natural ingenuity and great ability, both in organization and in work, the Germans have started from the very beginning and have built plants that are better than those to be found elsewhere in Europe.

I HAVE DESCRIBED in some detail the economic changes in Europe because well-informed Europeans recognize that the U. S. is largely responsible for the improvement, and they are very grateful for our generosity. This feeling makes the upper classes tolerant of the U. S. tourist.

The man in the street, however, gets his notion of America, in part, from the movies we send there. If you've been to the movies recently, you share my feelings about the picture they have of us. I recently saw a comment by Vincent Price that we used to export entertainment, now we ship out problems; he also made the comment that Europeans must be getting a Tennessee Williams' view of the United States. Europeans ask, "Is there a great depression in the United States? Why are you all so worried?"

We had in our home recently a brilliant young Irishman visiting the United States for the first time. He said, "I find the States so different! It's not at all what I expected. The food is excellent; the people friendly and hospitable and the scenery lovely." But when this man snapped a photograph in Chicago so people at home would know what the city was like, he selected for his subject an armored truck unloading as two guards stood by with drawn guns. "That's Chicago!" he said.

I want to return for a moment to the problem of the Common Market. The people who proposed the Common Market had in mind not only reduction of tariff barriers but an increase in trade within that area. There are now 180 million people in the Common Market, an area, in terms of consumers, as large as the United States. This large mass of consumers has produced two or three rather unusual effects. It's quite common now to be able to buy in any country in Europe goods that have been brought in from another country. This had not been true; in France you bought French goods, in Germany German things. The reason, of course, is that the reduction in tariff barriers has made these goods competitive. It has also had one effect which was probably unexpected: With a market of 180 million people, for the first time mass production is feasible—large-scale, high-speed production in high-capacity factories. This, in turn, has reduced the cost of those goods so that many Europeans can now buy the items they used to be able only to make.

Britain was told recently that she could be accepted as a full member of the Common Market. She has been a holdout for a long time, having missed four chances to join with Europe in some kind of a joint effort. Some Commonwealth countries opposed Britain's entry because they were afraid this would make Britain more interested

in the European market than in Commonwealth markets. Britain has finally recognized, however, that the Common Market is a going thing, and that they must get in or be frozen out.

Sweden announced some time back that she would apply if Britain went in. Countries not in the Common Market were in what was called the Outer Seven or the European Free Trade Association, consisting of Britain, Denmark, Norway, Sweden, Austria, Switzerland, and Portugal. Britain's step heralds the breakup of the Outer Seven and the probable joining of the other countries with the Common Market group.

One of the ways in which Europeans look at us is not based upon movies or upon our tourists but upon the experiences of European tourists here. Europeans who have been here are almost invariably impressed by the distances involved. In a day's time you can drive, if you're willing to hurry it a bit, from the north of Europe to the south or from the Scandinavian countries to Italy. It is certainly not uncommon to be able to drive in two or three countries in a single day. Europeans are tremendously impressed to find that here you can drive all day for two long days and not even get across Texas.

They are impressed, too, by the natural wonders of this country, wonders which have no counterpart in Europe, such as the Grand Canyon and Niagara Falls. They are understandably not very impressed when we show them a cathedral almost a hundred years old; in Europe such a building would be considered the "new" cathedral until it was at least three or four hundred years old. We haven't anything very old by European standards. Europeans, however, are impressed by some of our manmade works—our skyscrapers and our skylines. There isn't any place in Europe with comparable wonders. However, they are ruining some most attractive European cities by putting up little glass-walled skyscrapers that stand out like sore thumbs.

EUROPEANS ARE A LITTLE SHOCKED by the billboards lining our highways. The sign may say "No advertising within the state right-of-way," but two feet away the landscape disappears in a sea of billboards. They can't understand why we permit it. You can go from one end of Europe to the other with hardly anything to interfere with the scenery. I think we can only share their view that it's a shame we do these things.

They are negatively impressed by our railway system: How anything could get so run down and so dirty when we've had it only a century is beyond their comprehension. In the main, European railways are well run and clean. Europeans assume that because we are faced with greater distances we have better railways. They find it hard to understand that we do not.

They are impressed by our roads, because even the German Autobahns do not compare with our great interstate highways. The Europeans are impressed by how much we have and the ease of transportation by auto along these great highway systems. Europeans also admire the self-discipline of American drivers. In many parts of Europe, driving is an adventure. It's the spirit of competition. I was struck by a remark a Paris cab driver made

to me as we went through a red light: "No light is going to tell me what to do!" This is the spirit of French individualism which defies anything mechanical—perhaps "ignores" would be a better word. The French can be happy in a hotel in which the majority of the mechanical devices are not working, and you might as well be happy, too, because you can't change this spirit.

All in all, the European view of Americans in America is an extremely favorable one. They find that Americans are hospitable to a degree they had not expected; they find us helpful and courteous here. They do not, curiously enough, resent our lack of knowledge of languages. They are quick to acknowledge that we do not need four or five languages, so they usually come prepared with sufficient English to get along.

THEY ARE CONCERNED, however, about how little we know about music and art. I think we have lost something from our European heritage in the neglect of these areas. A visit to Europe is much more interesting if an individual has some background in the arts, which Europeans regard very highly and about which they are very knowledgeable. However, I am quite sure that, in this respect, throughout the United States there is a much greater interest in the arts than there was, say, 20 years ago.

Europeans are also concerned, and I think this is probably from our tourists in Europe, about the over-aggressiveness of the American. One manifestation of this aggressiveness is that we want to do everything too quickly. If you're "doing" Europe on a three-weeks' vacation, you've got to move. But the aggressiveness also manifests itself in demands for service *right now*, and there are many areas in Europe where immediate service is not available to anyone.

A close friend of mine was talking about why many people in his country do not like Americans. He said, "I think I know one of the reasons for it. My country has produced many, many migrants to your country. Almost invariably they were the people who weren't doing very well, and that's why they left." He added, "The ones who did very well in your country came back and visited us. Almost without exception, those visitors who returned were not modest in telling about their accomplishments in America. We learned to dislike the returning native very heartily and therefore disliked America."

There is another very natural reason for the occasional resentment you encounter in Europe. This is frank envy of the material possession of the average American. A little analysis would reveal that there's more to it than just this, both ways. We have a great many material possessions which are not at all necessary in Europe, such as air-conditioning. Let me hasten to add that this does not apply to central heating! Europeans simply never discovered central heating. Also, a great many of the common articles which we enjoy every day are a substitute for servants. In most of Europe, as in most of the rest of the world, servants are very readily obtainable, and there is no need for a dishwasher; there is no need for an elaborate kitchen. So envy of our possessions is based upon incomplete knowledge of this country in some cases. But the tourist who is emphatic about his possessions is

no more welcome in Europe than he would be in your home—and quite understandably so.

Another thing Europeans do not understand is our national guilt complex. They do not understand what we're ashamed of and why we apologize for prosperity, and yet they are convinced by our national actions, and by our best-selling books, such as *The Ugly American*, that we do just that.

Europeans are, in many cases, rather strictly bound by tradition. A number of our French friends who could well afford electrical refrigeration had none and wondered that we did. Their explanation is, "We don't need it. Who would keep food? It's not good if it's kept; you're supposed to serve it while it's fresh." It will be a long time before this notion is eradicated and the French adopt refrigerators. And Parisians are the worst Frenchmen of all in this regard. You can buy frozen foods in Lyons or Nice, but you can't buy frozen foods in Paris, except perhaps at a small gourmet shop. There are now four supermarkets in Paris. If you visit one of these supermarkets expecting to buy a wide variety of merchandise, you might just as well stay home. There is a tremendous quantity of merchandise but no more variety than the small shop. Part of the reason is that the law of France, in an attempt to avoid bigness, has been rigged to favor the small shop owner. This makes it necessary to visit from six to twelve shops to get food for dinner, and of course queuing up in each one, waiting to be waited on so that, unless you have the greater part of the afternoon to spend grocery shopping, don't start. But you couldn't devote the greater part of the afternoon to shopping anyway, because shops generally close from one o'clock until five! Dinner at eight o'clock is not just fashionable; it's a necessity, from the cook's point of view. This wastes the time of shopkeepers and many other people—and in another three hundred years it may change.

In Spain, lunch is generally at 2:30 and dinner at 10:30. It is a Spanish custom, too, after dinner to go to a small cafe and enjoy coffee and small talk until about 3 a.m. How do people get up the next morning and go to work? The answer is very simple: No one comes in before 10. This habit, in the opinion of Franco and his advisers, was irrational and interfered with the industrial and economic progress of Spain. So he decreed that no cafes were to be open after midnight and cinemas were to be open only before dinner. He tried to change the scheme of Spanish living. The Spaniards responded by going to dinner at 10:30 as usual and going on to the cafe at midnight. Cafe proprietors said, "I will accept the fine, but I will keep my cafe open."

People do not change readily where old customs are concerned unless there are strong economic reasons for doing so. Spaniards who go to Germany to work do so at German hours and get up and go to bed when the Germans do. But in Spain they resist change.

In the 15 or 16 years that there has been active participation by Americans in Europe, the inevitable has happened—Europe is becoming Americanized. More and more American institutions are being transplanted to Europe, along with American problems and American customs. As a visitor you will note many of these changes, but just don't try to get a glass of water with your meal.

Comment / On Mountain Tops, Mead, and Two-Headed Worms

FOR A RECENT ISSUE OF *Harper's*, McGeorge Bundy, special assistant to the President, wrote an imaginary survey of the college scene from the year 1975. Looking back on the remarkable growth of American colleges and universities in the Fifties and Sixties, Mr. Bundy writes:

"Perhaps the most surprising thing, to those who were engaged in academic administration in the 1950's, would be our splendid discovery that as new institutions grow in strength, old ones are not weakened. Yale and Princeton have not vanished from the mountain tops as Washington, Vanderbilt, and Brown have joined them there."

Coming from McGeorge Bundy, this is quite a compliment. Before joining the White House staff, Mr. Bundy was dean of the faculty of arts and sciences at Harvard; his opinions are based on long experience in the field.

Washington University has come a long way in recent years. Twenty years ago nobody would have thought of classifying Washington with Yale and Princeton, and yet today the University heads the list of those Mr. Bundy thinks most likely to succeed. It has been a long and arduous climb from the academic foothills to this perch high above the timberline and within sight of the summit.

How do we make it to the top in the dozen years Mr. Bundy gives us? Certainly not on our athletic reputation; in intercollegiate competition, we're somewhere below sea level. We're not going to make it either by trying to become a great "fun" school or a leading social center.

Obviously, Washington University has worked its way up this far and will make it all the way only by concentrating its efforts and ambitions on the primary functions of a university: teaching and research. Despite its Midwestern location and despite the confusion of its name with a half dozen other institutions, the school already is recognized as belonging among the leading universities of the country—and not just by Mr. Bundy.

Washington University will make it to that mountain top only by steadfast adherence to high academic standards. This determination to stick to our academic knitting so far has produced Nobel Prize winners, pioneering and productive departments in a dozen fields, and a growing army of alumni who can claim to be not just college graduates, but *educated* college graduates.

The period between now and 1975 will see an unparalleled demand on the colleges and universities of this country. Room is going to have to be found somehow for the millions of students who will be trying to get into college. It would be easy in the years ahead to slip gradually down the slope to the Great Plains of Mediocrity, where sheer quantity will solve all our problems. The challenge of the future for Washington University will be to keep climbing—the summit is within sight.

Life isn't easy on mountain tops; the atmosphere is rarefied and the footing slippery, but from what we hear, the view is great!

WHILE WE WERE DELIGHTED with Shepherd Mead's contribution to the Magazine on "How to Succeed at WU Without Really Trying," we must admit to being a little skeptical. We can't quite believe that Mead ranked first in his class, was elected to class president, and made Phi Beta Kappa only because he didn't play bridge.

Although he was no bridge player, Mead got in a lot of tennis when he was on the campus and he still does. The Mead home in Sussex, England, adjoins a tennis club and the whole Mead clan spends many happy hours on the courts, showing the natives how to succeed at tennis. The Meads are also showing their neighbors how to cope with the British climate. Since he installed 25 oil-fired radiators in his Sussex home, Mead boasts that he has the "warmest house in England."

When he sent his article to the Magazine, Mead remarked that we might consider the manuscript a gift to the University, adding "I am saving up to give you a building, but this will have to do for now." We think it did very well indeed.

Alumni contributions to their university need not be limited to financial help alone, as necessary and welcome as that assistance might be. An alumnus can give other things, too: his time, his interest, his talents. This Magazine's main function is to attempt to reflect the total picture of the University. Articles by faculty members and alumni can help present this total picture in a way that can't be done by any amount of staff-prepared material.

Through the years, *Washington University Magazine* has carried many original articles by alumni, including such distinguished writers as Fannie Hurst, Bill Vaughan, and Ernie Havemann. So far, we haven't had anything from Tennessee Williams or Bill Inge; but we're working on it.

THOSE INSPIRED and inspiring sketches of two-headed planaria illustrating the "Politically Worms" article in this issue are the work of a young and talented graduate of Washington University's School of Fine Arts—Charles "Chip" Reay, BFA 59. Chip is versatile, too. Not only can he draw realistic two-headed worms, but he recently sold to *Playboy* magazine a whole series of full-color, full-page illustrations—obviously not of worms.—FO'B



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