“If one can no longer believe with certainty that ‘those in charge’ know whereof they speak — then the stability of the entire society is in peril.”

Letter from the President

On the Collapse of Credibility

Water Resources and the Ecological Chain: or Let My Mongooses Go

From the Pitzer Catalog

Energy—The Price of Independence

In Short: A Short Look at Shortages

Interdependence, Self-Sufficiency, and the Energy Crisis

Report on Solar Energy for Southern California

Community Notes

Participating

Letters
Richard Armour has just chalked up his 49th book, *Going Like 60: A Lighthearted Look at the Later Years*, and his 50th, a children's book, entitled, *A Sea Full of Whales*. He says, "Your letter arrived today and I sat right down and wrote this, although I could have written it just as well or as poorly standing up." Armour has long-time connections with The Claremont Colleges. He's Dean of the Faculty Emeritus of Scripps, and a member of the Board of Trustees for Claremont Men's College.

The Solar Energy Team of the Program in Public Policy Studies was composed of four students; Robert Koster, Chairman, Pitzer College; Benjamin Hancock, Leland Huff, and Francis DeCarvalho, of Harvey Mudd College. According to Mr. Hancock, the full semester study grew out of a common interest in the environment. Intended as a plan for implementing a solar power plant for Southern California, the study developed, however, into a survey of current solar energy power plant research. The Program in Public Policy Studies is an intercollegiate program of The Claremont Colleges.

James B. Jamieson received his Ph.D. from Brown University, and was on the teaching staff of UCLA before coming to Pitzer in 1965. In 1971 he was a co-recipient of a $90,000 grant to study water resources in California. Vice-President and Associate Professor of Political Studies at Pitzer, he is currently working on a book, *It Is Better to Have Lived and Loved than Never to Have Lived at All.*

Thornton Armour is President of Atlantic Richfield Corporation, perhaps the only oil company to propose an end to the oil depletion allowance. Bradshaw holds a Ph.D. from Harvard University, and was formerly an Associate Professor there.

Frederick R. Lynch, Assistant Professor of Sociology at Pitzer, was formerly a Research Consultant with the Office of Economic Opportunity. He holds a Ph.D. degree from U.C.R., and says, "When I'm not teaching sociology, I'm reading sociology and history." He's a music lover with an extensive record collection.

The cover drawing is by Eugene Mihaesco, whose works appear regularly in *Harpers, New Yorker*, and the *New York Times*. Because of their detail, his pen and ink drawings are often compared with old steel engravings.

Peter Clausen describes himself as "an international relations person, with particular interests in American foreign policy, problems of the Atlantic Alliance, and arms control. Assistant Professor of Political Studies at Pitzer, with a Ph.D. from UCLA, Clausen will deliver a paper on "U.S.-European Relations in the 1970's" at the Western Political Science Association meetings in Denver this spring. He's also been invited to take part in the 3rd annual National Security Education Seminar at Colorado Springs in June.
Letter from the President

For reasons not entirely clear, the subject of energy brings to mind the serious public policy conflicts that constantly confront us. We seem to want enough energy and a clean environment, or at least our political leaders keep trying to be in favor of both. We want to be self-sufficient in energy but the world is interdependent and the oil companies are multinational. The desire to "have it both ways" runs deep, and is certainly not limited to energy versus environment and to nationalism and international cooperation. What is most discouraging is the failure of politicians to be willing to state their positions on such irreconcilable conflicts, because to do so will alienate 51% or 49% of the electorate. One sometimes yearns for political parties and systems which permit clearer choice rather than a desperate congestion in the middle or on the fence.

On a very small scale, Pitzer College faces analogous dilemmas, and the budget season brings these into sharp focus. The reach of our academic aspirations often exceeds the grasp of our financial resources. More specifically, as a corporation we must at least break even or we are out of business. In the face of rising costs for everything, that means raising more money and increasing tuition. But we are not at heart a corporation or a business. Our first responsibility is to education and the provision of the resources necessary to sustain and nurture education. We have been fortunate at Pitzer to avoid the kind of head-on conflict between education and money which now confronts us in the energy versus environment struggle. In the last analysis, however, we at Pitzer must choose to be measured not by our financial successes, but by the quality of the educational enterprise entrusted to us.

Robert H. Atwell
It is difficult to diagnose the current malaise of the American body politic. The pulse has steadied, but the fever still waxes and wanes, the patient is cross and cannot stomach the nightly news. What ails the body politic would appear to resemble an acute case of cynicism: the electorate simply refuses to swallow any more of the verbal roughage and righteous rhetoric placed before it by persons in positions of authority. For example, a sizeable majority of Americans do not believe that President Nixon is telling the truth about the Watergate scandal and they are highly skeptical of the energy crisis. And no one seems sure about whom or what to believe on cultural or social matters any more.

Some commentators suggest that what the body politic needs is a strong dose of diplomatic leadership. Los Angeles Times columnist David S. Broder is one such person who has recently bemoaned the absence of any statesman-like political, business, or educational leadership.

"What has happened to deplete the visible leadership of the private sector," Broder asks, "at the very moment when the public sector seems most in need of a transfusion of integrity, ability, and candor?"

However, other observers of the national scene, such as sociologist Robert Nisbet, argue that the problem goes much deeper than the mere absence of leadership. According to Nisbet, it is the very structure of authority itself which is in trouble in America. For two centuries, the twin processes of democratization and centralization undermined such traditional forms of authority as community, family, and local structures of government. Then, during the tumultuous decade of the 1960's, all forms of authority in the nation were systematically battered as the forces of protest and the counterculture elevated feeling above reason and irrationality over rationality.

I am going to argue that the current wave of public cynicism results not only from the absence of effective domestic leadership, nor from the breakdown of authority structures but rather from the collapse of what sociologist Howard Becker has characterized as the hierarchy of credibility.
OF CREDIBILITY

The hierarchy of credibility underpins all authority and leadership in every sector of society: in politics, in social and cultural institutions, in education, in business, and in religion. What is the hierarchy of credibility? Put simply, it is the unstated axiom of modern life that: the higher a person's social position, the more we tend to believe what he says, the more willingly we give him the right to define the situation. Rank, then, rates not only privilege but also credibility. For example, if the account of some situation by an office clerk of a corporation differs from that of the manager of that corporation, we tend to believe the manager because, after all, he is in a "position to know." The "higher ups," we all assume, possess all the facts including the "inside information"; the big shots know the "big picture."

In a society which is built around large-scale organizations and which is premised upon the rule of rational-legal authority — as ours is — then the legitimate and effective exercise of authority is based upon both technical proficiency and knowledge of the situation under the officially circumscribed realm of that authority. A person who is effectively occupying a position of authority (and authority in organizational society is vested in the office and not in the person himself) is one who follows the rules and procedures and is in control of his realm by knowing all there is to know about it — or at least he knows more about it than anyone else. It is assumed that the boss commands not only people, but also the facts.

If a person occupying a position of authority does not know what is going on in his domain, then his credibility is impugned. Questions are raised about "Who's in charge, here?" and there are sly remarks about yet another confirmation of the "Peter Principle" (that people tend to rise to their level of incompetence). Many persons in positions of authority can and do function with some minimal lack of credibility. Their ignorance of some matters may be of little consequence, or they may be able to cover or distort unpleasant or embarrassing facts for a time. When such practices go too far, however, the activities of people in their own organization and those in other organizations embedded in the same networks are disrupted. For when those persons are furnished inaccurate or falsified information, their calculations, their predictions, and their planning go awry to some extent. And calculability, prediction, and planning are at the heart of organizational processes. Hence, in an organizational society, if the hierarchy of credibility breaks down — if one can no longer believe with certainty that "those in charge" know whereof they speak — then the stability of the entire society is in peril. It is my contention that this is indeed our current dilemma.

The "higher ups", we all assume, possess all the facts including the "inside information"; the big shots know the "big picture."

It is difficult to determine precisely when the hierarchy of credibility began to erode throughout American society, but in politics, I believe that one of the early ruptures in the hierarchy of credibility occurred in 1959. In that year, President Eisenhower admitted that the United States had been engaged in illegal surveillance of the Soviet Union — in effect, that the Cold War had been a two-way process. Unfortunately, Ike came clean only
after the Soviet Union published pictures of the downed U-2 spy plane and after they had displayed the captured pilot of that craft, and after high officials in the U.S. government had first denied the existence of such flights. The hierarchy of credibility in politics was further damaged the next year during the bitterly-fought and narrowly-won Presidential campaign. [Remember those post-election stickers which read: "I miss Ike! (Hell, I even miss Harry!)"? ] The Bay of Pigs fiasco, the bomb-shelter panic, and President Kennedy's failure to deliver the promises of the New Frontier did not serve to restore the hierarchy of credibility. Even after Kennedy's death most Americans still refuse to believe the conclusion of the Warren Report that Lee Harvey Oswald acted alone.

Put simply, it is the unstated axiom of modern life that: the higher a person's social position, the more we tend to believe what he says.

Kennedy's successor to the Presidency, Lyndon Baines Johnson did not exude trust or credibility, despite his landslide election victory in 1964. And then Johnson's extravagant promises of a "Great Society" sank in the quagmire of a war in which he had promised American boys would not fight. The famous "credibility gap" yawned wide, particularly after the 1968 Tet offensive.

Indeed, probably the most serious blow to the hierarchy of credibility throughout American society during the past decade was the 1968 Tet offensive. The Vietnam War had polarized opinion politically, socially, and even culturally and religiously. Those supporting the war (and hence the President and/or the Pentagon) parroted the official version of events in Vietnam — that we were winning a winnable war. They leaned heavily on the hierarchy of credibility. Tet suddenly turned the official version of the Vietnam War into an illusion. The entire official weltanschauung of post-World War Two America began to collapse. The immediate agony and confusion of that collapse was evident at the Democratic National Convention in Chicago during August, 1968; but, more recently, only those on the political far right protested a significant symbol of the collapse of the Cold War spirit when Richard Nixon visited China.

After a decade of the consumer movement, the ecology movement, and mounting concern over possible collusion between corporate and government leaders, the hierarchy of credibility in the business world is now in a shambles.

The election of Richard Nixon to the Presidency in 1968 may have restored a measure of calm to the nation but needless to say it did no more than weakly prop up the sagging hierarchy of credibility in politics — which that same administration, re-elected by a landslide in 1972, would destroy. (But even in the first years of the Nixon administration, how could the hierarchy of credibility in politics be restored by someone nicknamed "Tricky Dick"?)

A similar breakdown occurred in the official version of reality in social, economic, and religious institutions. Black protest, women's liberation, Chicano power, gay activism, and the "rediscovery" of the plight of the American Indians considerably altered the shape of social relations in the nation. The official version (and vision) of continual progress and assimilation fell into doubt in a sea of militant protest and angry backlash. When "blue ribbon committees" of educational experts blamed black violence on white racism, when they called attention to the violence and lawlessness in the American past, when they emphasized the role of police violence in civil disorders, and when they formulated schemes for school desegregation, the hierarchy of credibility in education disintegrated. The experts had not told Americans what they had wanted to hear — then to hell with those "pointy-headed intellectuals," anyway! 
To hell, also with the hierarchy of credibility in culture and the arts when heretofore respected critics revelled in the "new realism" and the "new explicitness". Citizen organizations to promote "decency" in entertainment sprang up to combat critics who praised such films as *Midnight Cowboy* and *Easy Rider* and who raved about Jane Fonda's performance in *Klute*. Those same critics assaulted the Walt Disney *weltanschauung* in entertainment and labeled television a "vast wasteland." Americans-for-decency snarled back at the critics and called them kooks and/or faggots. ("Who are they to tell decent Americans that *Last Tango in Paris* is a masterpiece and that *Airport* is trash!") Bach was set to rock, the Beatles became the classicists of the modern era, and jazz went down the drain. The arbiters of good taste disagreed. Creative confusion reigned.

Even in religious matters, Americans have found credibility crumbling during the past fifteen years.

The credibility of the Business Establishment has also come upon hard times. After a decade of Ralph Nader, the consumer movement, the ecology movement, exaggerated and misleading advertising, and mounting concern over possible collusion between corporate and government leaders, the hierarchy of credibility in the business world is now in a shambles. The public's suspicion regarding the role of the oil companies in the current energy crisis is the most recent evidence of that development. Even intellectuals such as Irving Kristol, normally sympathetic toward the business community, have told businessmen to shore up their credibility.4

It is difficult to say how many American Catholics today believe in the infallibility of the Pope, but the hierarchy of credibility in all churches and synagogues has been weakened during the past fifteen years. In that time we have seen clergymen heatedly argue with their superiors, with each other, and with members of their congregations regarding civil rights, the war, political ethics, amnesty, homosexuality, and a host of other issues. Jesus freaks have taken religion into the streets of urban centers and country communes. Priests have married and quarreled with Papal dictates. Even matters of liturgy have been thrown open to question.

In discussing the collapse of the hierarchy of credibility throughout much of American society during the past fifteen years, it is difficult to avoid mentioning the role of an increasingly active and aggressive press. Since, by its very nature and definition, a free press is and must be somewhat critical or even skeptical, then the news media stand as a potential menace to the hierarchy of credibility which supports all forms of institutional authority in modern society. It is the job of reporters to pry and dig. They attempt to obtain versions of events from people at various organizational levels. And whether the "official version" of events becomes the publicly accepted one, is up to the reporter and his editor.

Needless to say, to those who subscribe strongly to the hierarchy of credibility, the most feared and hated journalistic animal is, of course, the muckraker, the *tyrannosaurus rex* of the press world. And the 1960's and 1970's are periods rich with muckraking from the early *Ramparts* exposés of the Central Intelligence Agency's operations to the publication of the Pentagon Papers by the *New York Times*, to CBS's controversial documentary, "The Selling of the Pentagon," and on to the unearthing of the Watergate scandal by the *Washington Post*. *Time* magazine (among others) even dared to discuss the death of God Himself. Since the hierarchy of credibility is a belief deeply ingrained in the American minds, it is no small wonder that Spiro Agnew and the Republican administration received solid support in their attacks upon those who were shaking their be-

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lief to its foundations. An intense battle was joined: high politicians fought the prestige organs of the press. The hierarchy of credibility in the press world was pitted against that of politics. And when the smoke of battle cleared, the Washington Post received the Pulitzer Prize while Spiro Agnew received a ten thousand dollar fine and a suspended jail sentence. The future of the Public Broadcasting Corporation's news shows looks good, while the future of Richard Nixon is in doubt. Yet how secure can the believability of the prestige press organs be when the hierarchy of credibility in other institutional spheres remains in shambles? Indeed can it survive at all?

With regard to the past, present, and future, the simple, very simple, lesson of Watergate (and of the energy crisis as well) is that the hierarchy of credibility and the structures of authority which it supports can only be destroyed from within: by not being credible, by not telling the truth. It is this lesson which has been repeated over and over again during the last fifteen years or so.

_The simple lesson of Watergate . . . is that the hierarchy of credibility and the structures of authority which it supports can only be destroyed from within._

Undoubtedly, authority and authority structures have been subjected to a great deal of subversion and general battering by forces of the counterculture and the protesters. But the real damage was self-inflicted. During the 1960's the hierarchy of credibility and authority in America — to use a popular phrase from a popular television series of the Sixties — "self-destructed." The erosion, the gradual weakening of the belief that the "higherups" know the score and have the situation in hand, resulted from the awkward or inappropriate response of various authorities to the challenges of their versions of reality presented by dissident groups. It was bad enough when those in authority ignored new facts or engaged in tactics of deceit or misrepresentation, but it was even worse when they were caught at it by the ubiquitous press.

As to the future survival of the hierarchy of credibility, much will depend upon the general political drift of American society, whether American society becomes more politically liberal or conservative. The classic liberal tends to be opposed to hierarchy and inequality in all social forms, feeling that such structures may oppress the liberties of individuals. The classic conservative, on the other hand, generally supports hierarchical systems, maintaining that such social forms are necessary to preserve and maintain social order.

Regardless of political stance, however, it now seems evident that as a result of pressures of World War Two and the subsequent Cold War, the structure of belief and action in American society became too rigid and that we too readily believed anyone in authority who mouthed the correct, patriotic, free-world platitudes. Some shake-up of the hierarchy of credibility may have been needed. Yet as long as Americans desire material abundance and the "good life" in general, then we must continue to live in a society dominated by large-scale organizations which can efficiently produce and distribute such pleasures. And large-scale organization means bureaucratic organization which, in turn, implies the necessity of hierarchy to some extent. This does not mean that we should cease experimenting with new forms of organizations, smaller and more democratic ones perhaps. But for the time being we are going to have to believe someone.

Frederick R. Lynch
MEMORANDUM

TO: Jerome B. Underwood, Dean of the Faculty
FROM: William Dill, Vice President
RE: Moratorium on Memoranda

As you well know, Pitzer College is facing a very serious "budget crunch," and I am writing this memo to ask your cooperation in helping me alleviate the situation. The Development staff, since October has been, so to speak, on a 24-hour "push" to develop a program to keep this lively, young institution right in the black. The problem is, Jerome, the memoranda from your office, and several other offices here at Pitzer, need to be answered. This takes time — precious time that could be spent in development work.

Let me give you just a few brief examples of what I mean. Fully realizing that our present development program is not producing the desired volume of gifts, my staff and I are working on several new non-traditional development approaches. One venture that appears to have great promise — and this is strictly confidential — is our fling into the water reclamation business. However, at every stage of developing this new project, I have
been forced to pause and answer memos. By now this idea of mine would have been producing some real income for Pitzer if only I could have freed myself to devote full time to it.

Here is a bit of background. Nine months ago I got the idea for a machine that could turn the dewy night desert air into water. The Development staff made a prototype and were nearly ready to test the machine in simulated conditions when I received your memo asking for a detailed report on Pitzer’s faculty compensation compared with 37 other institutions. Well, it took two days to gather data and another few days to analyze the figures and write a report. This delayed the water reclamation project at least one week.

But my staff and I returned to our task and discovered that the prototype machine, functioning in my youngest son’s sandbox on the night of November 21st, actually produced several ounces of water. We, of course, were ecstatic but did not want to announce this success to anyone until more experiments were completed.

Our next step was to build a full-sized machine in the desert. Before we could begin though, I received six memos from you, three from Henry Pennepacker in the Business office, and a very critical memo from the Chairman of the Board asking me to explain why our “Pennies for Pitzer” development program was a complete flop. In anticipation of getting started on the machine in the desert, we gave your memo (and those from Pennepacker, I might add) short shrift. (I apologize for this but once you grasp the whole significance of what we are trying to do I think you will understand.) But I did spend nearly two weeks grappling with an answer to the “Pennies for Pitzer” query. This was a rough one, and I really don’t believe our answer was satisfactory; looking back I think we should have just admitted that the project was a big mistake and thrown ourselves on the mercy of the Board Chairman.

Well, we finally got the machine built by the end of January, and I must say it was an impressive looking structure. Naturally we had many curious visitors, but we simply told them it was a new type of power plant. No sooner was the machine operating then we discovered a serious flaw. It emitted quite a bit of heat which, in turn, attracted snakes from all over the desert. One evening we estimated that several thousand snakes, in several layers, were hibernating around the machine, which was barely visible. You can well imagine the reaction of the maintenance men and technical personnel. Not one of them would go within one hundred yards of the site.

I spent the next two weeks attempting to find a solution and finally hit on an idea on February 15th. I brought in a large shipment of eagles who, as I had anticipated, built nests near the machine. They also had snake snacks almost constantly. I thought I had the entire problem solved when it was discovered that the machine which sucks in the dewy night desert air and turns it into water was also sucking in quite a few eagles. Our formerly pure water, intended for domestic use in our “Pitzer Desert Mecca,” was full of feathers and eagle remains. Needless to say the water looked a bit murky, and even without chemical tests we knew it was unfit for human consumption.

I next tried importing South American Condors, birds with a huge wing-span, in the hopes that they could swoop in, pick up the snakes, and battle their way out of the tremendous suction. This too failed. The condors could get the snakes all right but then had only enough power to hold their own against the terrific pressure. Here were these birds, if you can picture it, at least fifty of them, with snakes dangling from their beaks, flapping away about twenty yards above ground and remaining stationary. The staff and I stared at this scene incredulously for awhile and then turned the machine off. The birds flew about fifty yards and dropped to the ground exhausted. The snakes they carried simply slithered back and gathered around the machine once again. The same thing happened in twenty-five tests.

Time was running short. Sidney Fillmore, the Treasurer, reported that Pitzer’s financial
situation was worsening. Our President also informed me that the College’s revenues needed to be increased or I could go back to selling “Filth Queens” door to door with my father-in-law. I naturally increased my efforts to make the machine “pay off.” I was hampered, however, by a steady stream of memoranda. I then had a rubber stamp made that read “Deceased, Return to Sender.” This ploy bought some time, but when people discovered I was still alive, I spent even more time trying to explain what had happened. I was not able to return to the snake problem until the end of February.

It was early March when I hit on the plan of building a moat around the machine. It took about one week for the crew to complete the five-foot deep moat. When it was finished and filled with water not a single snake could be found anywhere near the machine. The only problem was that the machine, working at full capacity, could only produce enough water to keep the moat full; there wasn’t a drop remaining for commercial or residential use. As you can readily see, a machine in the desert that simply produces enough water to protect itself isn’t worth much.

After another siege of answering a pile of memos and wrestling through several emergency budget meetings, I finally got back to the project which could bring in several
million dollars to Pitzer's coffers. What I've done now is to eliminate the moat — the snakes are back again, of course, and it seems as though they are back in greater numbers than ever before. But I do have a shipment of mongeese at the dock in City Harbor, and if I can just secure $7000 I can get those babies through customs and out into the desert to terrorize the snakes. There won't be a snake within one hundred miles of the machine when those mongooses are released.

As you well know, having been in the academic world for many years, I can't pay for the mongoose shipment out of my office budget. Can't you just see an entry in my next monthly expense report that reads, "250 mongeese, $7000"? Lord knows, I think that even Betty Sikes down in the mail room might have some questions about that one.

Well, anyway, I have to find about seven g's just to keep the "big project" moving. My plea is that you hold all your memos for two weeks. Go ahead and dictate or write them but don't send them. By that time I'll have the situation well in hand, and my new invention will be producing enough water to turn the desert into a verdant tropical paradise.

Thank you for your attention to this memo. As we say here in Development, "Stay in a low crouch and keep punching!" Incidentally, Jerome, please disregard any memos you may receive from me this week, including this one.

James B. Jamieson

From the Pitzer Catalog

The following courses are among those offered at Pitzer College in the 1973-74 academic year.

25—Man and Machines. The social consequences of technological development are examined in this course. A survey of the history of technology will be presented, accompanied by an analysis of the manner in which people have restructured their lives and thoughts during the course of technological change.

129—Policy Analysis. This course will deal with the causes and consequences of public policies. Primary emphasis will be on policies designed to cope with environmental problems (pollution, resources, etc.). This will involve an analysis of the role of environmental forces, institutional arrangements, and political processes on the content and impact of public policies.

100CC—Program in Public Policy Studies. The intercollegiate program sponsors interdisciplinary teams of students and faculty members who investigate public policy problems and prepare comprehensive research reports recommending policy alternatives. Researchers in the program then deliver these reports to public officials and citizens who can make or influence decisions regarding policy. Students also participate in a seminar on public policy research methodology. Past topics have included child care, low income housing, solid waste disposal, air pollution, electrical power, mass transit, land use, minority business enterprise, special education, and penology.

46—International Politics. Introduction to the nature and characteristics of international politics, with emphasis on the diplomatic history of the post-1945 period. Principle topics include the Cold War, the confrontation between the industrial and the developing nations, and contemporary problems of technology and resource allocation.

18—The Economic Role of Government. The role of government in regulating the economy to "promote the public interest." This course will include examinations of the impact of governmental decisions on business activity, the supply of public goods and services, and the distribution of income and wealth.
ENERGY – THE PRICE OF INDEPENDENCE

At first, for most Americans, the energy shortage seemed just another of those annoying but temporary trials that characterize the times. But gradually the shortage has grown for all of us into a nagging reality that is neither minor nor transitory. Something, clearly, is very wrong.

The question is, what? On a material plane, the answer is easy to perceive, although until the Arab oil embargo imposed in October, 1973, it was not widely understood. The U.S. is short of petroleum and all other usable forms of energy. Even though the Arabs have lifted the embargo, a scarcity of energy will be a fact of American life for a long time. That is where simple answers end. The rest is uncertainty, despite wishful thinking by those who believe the petroleum companies created the energy shortage and can therefore uncreate it. No single company; no single industry; and no single country has such leverage.

The scramble for energy is on all over the world, and it probably will last at least until the turn of the century. The shock waves are felt here by the motorist who cannot get gasoline and by those in the highest echelons of our government whose foreign and domestic policies are influenced by the inclinations of tiny, underpopulated middle eastern states — who are sitting on 350 billion barrels of oil, almost ten times our own current domestic reserves.

The implications of all this are so profound that one can only guess at the ultimate resolution. There is no assurance for example, that the U.S. will emerge from the crisis with its influence and affluence intact vis-a-vis the other nations of the world.

One thing is certain: The era of cheap
energy is definitely over. From now on the search for new energy will be costly. If we are to succeed in overcoming our present difficulties and maintaining a reasonably high economic pace through the 1980's and 1990's, it will be because Americans have accepted the heavy price of achieving energy sufficiency.

Why did the U.S. get in this bind? First, because we Americans use more energy than we produce. For example, prior to the embargo, we consumed around 17 million barrels of oil a day, more than three gallons for every man, woman and child — but we produced only 11 million barrels, including natural gas liquids. And our appetite, until the embargo forced some basic conservation measures, grew almost daily and it was predicted that the U.S. would consume more oil in the next decade than it used in the last 100 years.

The energy shortage is a compound of excessive demand, declining domestic supplies, and a self-defeating national policy.

While consumption soared, the nation's once apparently bottomless recoverable reserves peaked out and began to drop. The U.S. once produced more than half the oil in the world; it now produces only about 20 percent. As late as the 1967 Suez crisis, the U.S. had enough productive capacity from domestic sources to supply its own needs and to help out friends overseas in a pinch.

In slightly more than a decade, a brief period even in terms of the short American experience, the U.S. has gone from complete energy independence to a dangerously large reliance on foreign sources, and the acuteness of the shortage today is partly the result of that reliance.

Secondly, national policies governing energy have been unrealistic and detrimental to producing more domestic energy. These policies ignored the long-range consequences of prices that have been far too low and some environmental measures that have been applied far too rapidly.

The artificially low price of natural gas set by the Federal Power Commission in 1954 has had the doubly destructive effect (which was predicted) — use has skyrocketed while economic incentive to find more has diminished. The result is that natural gas now supplies approximately a third of the nation's energy and we are using it twice as fast as we are finding it.

The Coal Mine Health and Safety Act of 1969 and the National Environment Policy Act of the following year were directed at laudable goals — yet these pieces of legislation also intensified the energy problem by restricting the production of energy resources.

New air pollution standards promulgated under the Clean Air Act of 1970 have forced many large-scale users of high-sulfur coal, notably the electric utilities, to shift to oil and gas, hastening the depletion of those fuel supplies. A number of states — reacting to past abuses by industry — have restricted surface mining, while deep-mining output has dropped sharply due to increased costs associated with broader safety standards.

Exploration for new oil reserves, as well as development of those we know about, also have been stymied by price controls and blocking tactics by certain environmentalists. These measures have caused leases to be withdrawn, delayed development of Arctic and offshore reserves and delayed construction of the trans-Alaska pipeline.

Oil was discovered on the North Slope of Alaska in 1968, a vintage year for the industry, but, as it turned out, a very misleading one. The North Slope discovery was the greatest oil strike ever on the North American continent with proved reserves estimated at 10 billion barrels. Production of two million barrels daily can be sustained from the North Slope. In 1968, an understandable sense of enthusiasm and determination gripped the petroleum industry and led to the forecast that Prudhoe Bay crude would be reaching West Coast ports by 1972.

Unfortunately nothing happened on the North Slope because of something that
happened at Santa Barbara, California, at roughly the same time — the oil spill that as much as anything else triggered the environmental age. The ensuing debate has insured that when the trans-Alaska pipeline is finally completed, probably in 1977, it will be more acceptable from an ecological point of view. But as with everything else in the world, there is a price to pay for this progress. The delays, inflation, and stricter environmental controls will boost the final cost of the pipeline to between $4 and $4.5 billion.

To repeat: the energy shortage is a compound of excessive demand, declining domestic supplies, and a self-defeating national policy that has prevented the U.S. from finding its remaining reserves of fossil fuels and from developing the new sources of energy needed by the year 2000 when the nation must be getting well over half its energy from nuclear, geothermal, solar, and other exotic sources.

A contributor to energy waste has been the oil depletion allowance, which has kept down the price of energy paid by consumers.

What are the solutions:

Some are obvious. First, everything must be done to reduce as far as possible America’s need to buy gas and oil overseas. However, there is no way it can avoid at least some degree of reliance on imported oil for the next 10 to 15 years. This certainly will delay a return of America’s energy independence, but hopefully only temporarily.

In the long run, however, there is no real alternative for the U.S. except to develop domestic energy resources capable of meeting the nation’s needs under conditions that it alone would impose. This means full mobilization of the North Slope, the fields offshore Santa Barbara and Southern California, in the Gulf of Mexico, and, eventually, off the East Coast and in the Gulf of Alaska.

Discovering and exploiting major domestic oil and gas fields has become both more difficult and more expensive. The U.S. has 38 billion barrels of oil reserves and government and industry experts estimate that 100 billion more are to be found. It has many billions of barrels of oil locked in the shales of Colorado and Utah and the equivalent of many billions more in vast coal deposits.

Only capital investment can get this energy from the ground and bring it to the consumer. Americans must be willing to pay the price of today’s energy to meet the costs of finding and producing tomorrow’s. Americans must understand the relationship between profits and the enormous capital expenditures needed for the U.S. to have any hope of becoming self-sufficient in energy. That relationship is this basic: the ability to finance future energy projects depends on profits earned today.

To achieve and maintain the level of profitability needed to generate the estimated $175 billion which will be required in the next 10 years for domestic energy projects means the removal of price controls of all kinds and a return to marketplace pricing, the fundamental lever of the capitalistic system. Energy in this country has been not only a bargain, but also cheap to the point of wastefulness. The contributor to energy waste has been the oil depletion allowance, which has kept down the price of energy paid by consumers. Hence, de-regulation of petroleum and natural gas prices could be accompanied by the phasing out of the oil depletion allowance.

This kind of adjustment in the pricing of oil and natural gas would serve two essential goals. First, it would help generate the development of additional energy resources; and second, it would encourage the continued conservation of energy more effectively than the most impassioned plea.

Thornton F. Bradshaw
In Short: A Short Look at Shortages

Shortage is the word today.
We're short of this and that, they say.
But while we may be short of oil,
I am, for one, not short of toil.
However I am short of time
And sometimes short of words that rhyme.
I jog, and would postpone
My death,
But have to stop when short of breath.
I also have that rather rare cut,
A short, old-fashioned sort of haircut,
And worse than that (no wig I wear),
Increasingly I'm short of hair.
Though called short-tempered, I am not,
For temper I have got a lot.
I'm short, though, when compared with Wilts,
And at parades have need of stilts.
Not only am I short of height
But often short of sleep at night,
And short of cash and oft shortchanged,
While all my plans are quite short-ranged.
Short cuts are few, shortcomings many,
Shorthand is what I can't write any.
Shortsighted I'm, and out of sorts
When, laundry late, I'm short of shorts.
Short notice frequently I get;
Short orders often I have et.
Less often right, I fear, than wrong,
On shortages alone I'm long.

Richard Armour
That the energy crisis has something to do with American foreign policy is readily apparent. Were it not for American support of Israel, there would have been no Arab oil embargo. Were it not for the generous encouragement by successive Administrations of the overseas activities of American oil companies, the present situation would be at least different, and perhaps even, as some have argued, non-existent. Similarly, the effects on our foreign relations are evident: a low ebb in Atlantic Alliance affairs, the prospect that the accumulation of dollars by Arab nations may undermine the already precarious international monetary system, and so on. Beyond such immediate issues, however, the energy crisis contains more profound, and indeed perhaps revolutionary, implications for America’s relations with the rest of the world.

In the past few years, two events have dramatically brought home (both figuratively and literally) the close linkage between foreign policy and American domestic welfare, each challenging some of the most entrenched assumptions about American society. First, the domestic repercussions of the Vietnam War exploded the myth of America as a basically consensual, peaceful, stable society. Now the oil crisis has cast doubt on the security and stability of our material standard of living. To be sure, these reckonings were overdue in any case. Yet it is striking that in each case a foreign policy event laid bare with devastating suddenness the underlying tensions and “contradictions” of American life.

It is not surprising that such dislocations have fostered a certain mood of disengagement and a desire to insulate American society from the shocks and dangers of the outside world. Thus a major lesson of Vietnam is the need for a “lower profile” in foreign policy, a renunciation of the policeman’s role in world affairs. Similarly, the lesson of the oil shortage seems to be that we must strive to be “self-sufficient.” “By the end of this decade,” the President has declared, “Americans will not have to rely on any source of energy beyond our own.”

The two problems are of a different order, however. While the necessity of a measure of disengagement is a reasonable and healthy inference to draw from Vietnam, it is a questionable response to the situation. Before expanding on this point, though, it is worth placing the goal of self-sufficiency itself in historical perspective. For it suggests, if taken seriously, a radical reversal in the way we have traditionally conceived of our society in relation to the rest of the world.

There has always been a pronounced tendency on the part of Americans to externalize the requirements of our society’s welfare. Since the earliest days of the Republic, we have tended to believe that the fulfillment of America’s purpose depends in some degree on the expansion of our system, on the flourishing of the “American way of life” elsewhere in the world. Thus, for example, the alleged imperatives of Cold War competition with the Soviet Union were never adequate to explain
American support for Israel or opposition to socialist revolution in the Third World. American values — both material and ideal — were perceived to be at stake here, and a defeat of these values abroad seemed necessarily to cast doubt on the viability of the "American experiment" at home. In this respect, as William Appleman Williams and other revisionist historians have observed, we have tended to define our interests and purposes in "imperial" rather than "national" terms.

These observations are meant to emphasize the point that America's conception of its interests has led, particularly since World War II, to a massive American penetration — political, economic, and military — of the outside world. Global "interdependence" is one of the great clichés of our age. That interdependence has generally been regarded as a positive phenomenon no doubt reflects the fact that this state of affairs has largely served American interests. (One need only invoke another popular cliché — that America, with 6% of the world's population, consumes 35% of its total energy and resources — to realize that this is so.) Interdependence has, for us, generally meant an extension of American power, control, and hegemony. Only now are we coming to recognize what the Third World countries (and our European allies) have known all along, that interdependence also has its negative side, namely dependence, vulnerability to outside manipulation, the loss of national autonomy.

Nixon's "Project Independence," then, implicitly represents a remarkable shift in the value we attach to interdependence. But while this shift may seem a natural and rational response to our immediate distress, it is an unfortunate and inappropriate one. The goal of self-sufficiency, and the attitude it both reflects and encourages, represents a dangerous misreading (or, more accurately, an evasion) of the real significance of the energy crisis. The real lesson, of course, is that the basic resources of the planet are finite, and that in the long run only radical adjustments in the way we live and in the global mechanisms by which these resources are allocated can permit us to cope with this fact. It is not that we can no longer afford interdependence (for there is no alternative to it), but that we can no longer enjoy it on the privileged terms to which we have become accustomed.

Energy self-sufficiency may be feasible, if not by 1980, perhaps by 1985, if we undertake a crash program of developing new sources and are willing to disregard the environmental impact of such a program. Yet is it imaginable that we could long remain self-sufficient at anything like our current standards of growth and consumption? And what of the rest of the world? One thing about finite resources is the logical impossibility of each 6% of the population enjoying one-third of them.

It must be emphasized that this problem of resources is not simply an economic one, but a political one as well. The global distribution of wealth and power is increasingly untenable in both moral and practical terms. "Self-sufficiency" suggests an attempt to buy time for this system, to perpetuate against logic and ethics an international structure of privilege whose very instability and precariousness are underlined by the current crisis.

Indeed, if there is one fact that should be driven home by our present predicament, it is the artificiality of this structure, of what economist Robert Heilbroner has recently described as "the ghastly resemblance of the world's present economic condition to an immense train, in which a few passengers, mainly in the advanced capitalistic world, ride in first-class coaches, in conditions of comfort unimaginable to the enormously greater numbers crammed into the cattle cars that make up the rest of the train's carriages." It doesn't take a Marxist to recognize that to some extent our affluence has been made possible by the economic and political subjugation of most of the world's population. And, whatever one thinks of the Arab's motives in the current crisis, it would be naive to ignore that their oil "blackmail" is in a very real sense a progressive development — a model for Third
World countries whose only hope for bettering their situation (given the indifference of the affluent) is to exploit to the fullest whatever leverage over the rich their natural resources may afford them.

In the long run, the imperative of a more equitable global distribution of material well-being must be accepted, if not out of altruism then in our own self-interest. As Heilbroner points out, the governments of the world's poor "are not likely to view the vast differences between first class and cattle class with the forgiving eyes of their predecessors."

It is unrealistic to believe that America can shield itself from the nightmarish instabilities that this global situation is increasingly likely to produce. The attempt itself renders us liable to the very accusations we make against the Arabs. Surely the principle we should be trying to foster is that no nation can claim an exclusive right of "ownership" over those resources upon which the welfare of other societies depends. Yet a policy of self-sufficiency implicitly undermines this principle. How is the rest of the world, for whom self-sufficiency is not even imaginable (and this includes those allies whom we expect to cooperate with us in a "united front" against the Arabs) likely to regard an American attempt to insulate itself from the logic of interdependence?

The problem with self-sufficiency is not so much that it is the wrong answer, but that it addresses the wrong question. It evades the necessity of global planning if the world as a whole is to avoid catastrophe, and instead encourages the illusion that we can maintain our current way of life with only minor discomforts and readjustments. It encourages the belief that the nation-state (ours or anyone else's) can still provide an adequate frame of reference for the solution of the problem of world order.

One thing can perhaps be said on behalf of the policy. It seems to imply a decrease in our exploitation of other people's resources, and, more generally, in our "imperial" penetration of the world. But it substitutes an indifference that is equally indefensible. We stand in danger of drawing a perilous and highly ironic lesson from the energy crisis: Just as we once used global involvement and expansion to avoid coming to grips with the flaws and inequities in our own society, we now are tempted to use an illusory self-sufficiency to perpetuate a similar blindness to the desperate state of global society.

Peter Clausen
A REPORT ON SOLAR ENERGY FOR SOUTHERN CALIFORNIA

TO: Dr. Jack Merritt, Faculty Advisor
FROM: The Solar Energy Team

The Solar Energy Team submits, here-with, the final report on problems in large scale generation of electricity and policy recommendations for further solar research. Our report has been condensed to allow easy reading of the most pertinent material. Enclosed with this report are five rough draft sections that provide background information on the following topics:

A. Electricity Production: Summary of present and future technologies
B. Technical Analysis of STEC and other solar power sources
C. Economic analysis of above
D. Non-economic factors favoring solar power
E. Data on solar radiation in the U.S.

It is our hope that other teams could start where we had to leave off.

Respectfully submitted,

Robert Koster, Chairman
The Solar Energy Team

INTRODUCTION

This study began as an investigation into the possibility of constructing a solar to thermal electricity production facility in the Southern California area. A report by the Aerospace Corporation for the National Science Foundation (NSF-C716) on the practicability of a 1000 MW base load solar to thermal energy conversion (STEC) plant formed the basis of our research. The conclusion of the Aerospace study, which is also shared by this group is that a large scale solar power plant would be technically feasible but uneconomic. Modifications of the Aerospace STEC proposal were also investigated but no immediate solutions to the economic problems were found. A proposal for large scale solar-voltaic conversion was also reviewed. This process shows great promise but its economic feasibility depends on mass production of solar cells which need further development. At this point the narrow limits of the original study had been satisfied. It had been determined that it was not possible under present circumstances to construct a large scale solar power plant in Southern California since the cost of electricity would not be competitive with fossil or nuclear power production.

Rather than stopping at this point, the study team began to question why such an abundant source of energy as the sun could not be tapped more efficiently to provide the U.S. with safe, clean energy. It became apparent to the group that solar energy utilization had not received more intensive development due to inherently political rather than strictly technical or economic reasons. Typical cost/benefit analyses simply do not take into account the many environmental, energy-independent and energy diversified advantages of solar power. The efforts of the study team then shifted to constructing some specific policy recommendations that would allow solar energy a greater role in the nation’s energy production. This report thus falls into two parts, a technical and economic assessment of STEC, and some specific recommendations regarding the research and development of the entire spectrum of solar energy.

It might be suggested that in reading this report the reader, regardless of his level of interest, first read this position paper. This position paper is concerned primarily with several types of technology applicable to large scale
Robert Koster  Ben Hancock  Leland Huff  Francis DeCarvalho

electric power production. The study team admits that there are other promising solar technologies which have only been considered very briefly here. There exists a more extensive, while rougher, working draft which may be obtained in the offices of The Program in Public Policy Studies of The Claremont Colleges, by the more deeply interested reader. This working draft contains the more complete findings of the study team on the technical and economic analysis of STEC, and background on the entire energy production field.

It is hoped that the information contained here can be used for further research. It should be kept in mind that the study team’s recommendation is based on a scrutiny of the Aerospace STEC system, as well as research of the Meinels’ project in Arizona on planar collectors. The Meinels’ reports and the Aerospace reports, both the original ones and the revision now in press, should be consulted.

TECHNICAL AND ECONOMIC COMPARISON

STEC

One installation of the STEC (Solar to Thermal Energy Conversion) system features cylindrical mirrors of parabolic cross sections, which focus incoming energy upon a specially coated tube through which a heat conducting medium flows. This heats up water in a heat exchanger; the steam thus formed runs a turbogenerator. During the day a large amount of the conducting fluid is stored at high temperature to form reserves for night time use. A reversible electrolyser-fuel cell may also be used for storage. The particular system analyzed by Aerospace Corporation provided storage facilities for 18 hours (the viable period of service under continuous low sunlight conditions).

The capital investment cost of a 1000 MW solar-thermal conversion system is estimated to be between $1000 and $2000 per kw (1972 dollars) according to diverse sources.* This is four to six times the expected cost of constructing conventional nuclear and fossil fuel plants of similar capacity. The cost of operation and fixed charges (i.e. busbar cost)** is about 85 mills/kwh (1990 dollars). In other words, solar plants are capital intensive, and a large initial investment is required. In order to make the STEC concept an economically sensible venture, its capital cost must be reduced by at least a factor of two, to about $500/kw. Although this cost is still higher than that of conventional plants (approx. $250/kw), it is competitive because the busbar costs due to free fuel and low maintenance, are comparable to those of conventional plants (i.e. the cost to the consumer and returns to the investors are comparable).

A study of the components has shown that mass production of STEC will not reduce the capital cost significantly (approx. 15% at best, authors’ estimate). In depth studies on optimization must be made to improve the STEC system. Cloudy days, for example, would vastly decrease the performance of the focusing system. In answer to this, the Meinels of the University of Arizona are looking into the possibility of a planar collector which would not need to focus on the sun. If and when such a thing is developed, it would promise to reduce the capital cost significantly, because this design requires no diurnal tracking and needs less storage capacity.

Photo-voltaic Energy Conversion

Another scheme of solar energy collection is that employing solar cells, which convert energy into direct electric current. Energy is stored using electrolytic-fuel cells, and system outputs are either direct current, or heat. (This system produces oxygen and hydrogen, and in particular hydrogen, which is recommended as a fuel for internal combustion engines.) An example of such a system is proposed by the MITRE Corporation. Advances in solar cell technology have produced a “violet solar cell”

* Meinel et al., Aerospace, U. of Minnesota/Honeywell
** Busbar costs represent 60% of the cost to the consumer for a typical electrical distribution system.
with 40% higher efficiency which responds even on cloudy or hazy days.

**Domestic Solar Heating**

Collectors are "flat plate" arrangements with a conducting medium (water) circulating through the collector body. Heated water is stored subsequently in a large tank for circulation in the house by pipes. Output temperature is 65°C (135°F); efficiency is approximately 11%. (See Technology Review Figure B.)

This and other methods of utilizing solar energy for home heating purposes are the most direct and immediately realizable applications. A typical household requires $10^{11}$ joules/year.* The 1972 costs for a household using this amount of heat energy were:

- Oil at 75% efficiency (22¢/gal.) . . . $280
- Gas at 75% efficiency (23¢/100 ft³) . $275
- Electricity at 100% efficiency (1.8¢/kwh) . . . . . . . . . . . . . . $500


Domestic solar heating systems have been proposed which, if financed as part of the mortgage over a 20 year period at 7% interest, would increase the annual cost of the mortgage by $300 to $550 per installation. If fuel prices rise faster than construction costs, as they probably will, solar heating is likely to become competitive with gas and oil in the very near future.

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**COMPARISON OF SOLAR ENERGY PRODUCTION WITH NUCLEAR FUSION ENERGY**

Although solar and fusion energy are very different types of power sources, some similarities between them can be seen. Both solar and fusion are regarded by some as the solution to our future energy needs. Neither would ever have a shortage of fuel, and they both would be very clean environmentally. Solar and fusion energy also have many differences. Solar energy for large-scale generation of electricity is presently technically feasible, but it has not yet proven to be economic. Controlled fusion has never been accomplished on the Earth. It is thus still only a theoretical power source and one could only guess about its economic feasibility. There are also some very significant non-technical differences. Fusion has a home-base in Washington in the Atomic Energy Commission. The fact that fusion has an institutional base in the U.S. partly explains why fusion appropriations are so much greater than those for solar energy. In fiscal 1973, the total energy R & D budget was 640 million dollars; of that solar energy received 3 million and fusion 75 million. In November of 1973, a new energy budget was proposed for 10 billion dollars over the next five years (2 billion a year). Out of this, solar energy is to get 40 million and fusion 290 million per year. Although the solar budget has increased markedly, it is still far below the fusion appropriations.

Because fusion and solar energy show approximately equal promise, it is the recommendation of the current study team that the solar energy budget be increased to approximate parity with the fusion budget. A sample budget for solar energy research, compiled by the NSF/NASA Solar Energy Panel, arrived at a 15 year figure of about 3.5 billion dollars. This averages to about 230 million per year, which is well within a factor of two of the proposed fusion budget. Obviously the solar energy research budget should not be augmented by a factor of five or six in a single year, rather it should in increased gradually over the five year period.

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* This is equivalent to the continuous output of a 4.25 hp motor in one year.
Concurrent with an increased solar budget, this study team would recommend the establishment of a national solar energy agency and a research laboratory. This step is vital since increased funding alone will not solve the problem. Presently the National Science Foundation contracts for solar energy research with various university and private organizations. The NSF should be commended for its efforts as the primary organizer of solar energy research in the U.S. However, the magnitude of a solar research program recommended here would be too large to be administered by the NSF and would dominate the activities of the NSF. Thus a national solar agency is necessary to plan and organize solar research to meet both short and long range goals. The agency would also serve as a representative voice to Congress. Information dissemination would become a very important role of the agency since, without a clear and persistent voice, solar energy will never receive the necessary funding to make it a major power source.

SUMMARY AND CONCLUSIONS

1) Solar power for electric power generation is presently economically unfeasible, due primarily to high capital costs. Much of the cost of a STEC plant is encompassed in capital equipment like mirrors, motor, etc., which are already mass produced and thus not likely to decrease significantly in cost. Other modes of solar power generation, especially the solar-voltaic, which are quite expensive today may decrease in cost due to mass production of some of the major components.

2) Solar power does offer many non-economic advantages that favor its implementation:
   a. no wastes added to the environment.
   b. very low in average thermal pollution.
   c. desirable for a diversified energy program for the U.S.
   d. desirable to insure an energy-independent national economy.

3) Solar power has been neglected as a realistic future power source until very recently, consequently it is lacking a sufficient budget, staff, and the planning necessary to make it a major power source.

4) The allocation for solar energy R & D should be raised at least to parity with the budget for fusion. Fusion is currently budgeted at 98 million dollars per year and is expected to rise to 310 million. Solar energy seems to be at least as good, if not a better possibility than fusion energy and as such, should be funded similarly.

5) A national solar energy agency should be established to plan and administer solar research and development. Solar energy needs a home in Washington and a voice to represent its potentialities.

6) The overall problem of energy generation and usage should receive a larger R & D budget in accordance with its tremendous national importance. The problem of energy conversion and its use should receive a national priority at least as high, if not higher, than our current space program. The formation of a federal agency to oversee the entire spectrum of energy R & D, use, and conservation also merits serious consideration.

The Solar Energy Team
Robert Koster, Chairman
Ben Hancock
Leland Huff
Francis DeCarvalho
Community Notes

Fifteen seniors have been selected for the Senior Academic Internship this year. The Internship is designed for students who have demonstrated academic excellence within their fields of concentration as well as general academic proficiency. The disciplines of biology, philosophy, political studies, psychology, sociology, history, education, French, economics, and English are represented.

Students are selected by field groups in each concentration to work closely with specific faculty members in their fields of concentration for the entire senior year. Those selected for the program, under the direction of Ronald K.S. Macaulay, Associate Professor of Linguistics, are Linda Bass, Pam Duhl, Susan Friedrichsen, Dario Grossberger, Anne Hankel, Robby Johnson, Miriam Kadin, Joyce Kaneda, Gary Kates, Monica Leff, Ken Levy, Wendy Levy, Bonnie Optner, Beth Reasoner, and Donald Wasson.


Ruth and Lee Munroe, Associate Professors of Psychology and Anthropology, respectively, recently edited the Winter, 1973 issue of the University of California Press' journal, Ethos. Ethos is a new interdisciplinary journal embracing the social sciences. The special issue was dedicated to their teacher, Professor John W. Whiting of Harvard University, in celebration of his 65th birthday. All contributors to the issue are former students of Dr. Whiting. The noted anthropologist was honored by his students and colleagues at a banquet during the American Anthropological Meetings in New Orleans last winter. He delivered the Distinguished Lecture at the Meetings.

Glenda Raikes, Pitzer College freshman, saw her own play produced and performed by the Four Colleges Players of Pitzer, Scripps, Claremont Men's and Harvey Mudd Colleges. "Nobody's Birthday" a long, one act play, was presented in the Strut and Fret Theater of Balch Hall March 8 to 10 to a capacity crowd.

"Economics and Politics of the Energy Crisis" was the subject of a panel discussion sponsored by Pitzer College students January 17 in Avery Auditorium.

Serving on the panel were Jane Arnault, Assistant Professor of Economics; Roy Chaney, Manager of Planning and Public Relations for Atlantic-Richfield; Howard Sherman, Professor of Economics at the University of California, Riverside; and Franklin Tugwell, Associate Professor of Government at Pomona College. A lively, informal discussion followed.
Ann Cumberland Henning, class of ’71, attended the Southern California School of Theology for three semesters before enrolling in the Edinburgh University Divinity School in Scotland. With classes completed for her M.A. in Religion, she is now working on her thesis.

A gift of $10,000 from Russell K. Pitzer was recently announced by Robert Duvall, Executive Director of Planning and Development. The gift was presented by Harold Pomeroy, charter Trustee and friend of Mr. Pitzer.” At 95, Mr. Pitzer, the Founder of the College, is still very much interested in its progress,” Duvall said. “The success of Pitzer proves that his vision in starting the college was clear. We hope that his continued sacrificial giving will inspire others to join this enterprise now.”

Leah Light, Assistant Professor of Psychology, says, “For the last few years I have been interested in people’s memory for trivia — whether memory for trivia is automatic or whether attention to non-semantic word attributes diverts attention from meaning and whether such word attributes aid us in retrieving semantic information from memory or in differentiating old from new experiences.” Some of her research has been described in "Memory for Modality: Within - Modality Discrimination" co-authored with Carol Stansbury, Cheryl Rubin, and Stan Linde, which appeared last summer in Memory and Cognition. A second paper, written with Dale Berger of The Claremont Graduate School, is "Memory for Modality: Within - Modality Discrimination is Not Automatic," and will appear in a forthcoming issue of Journal of Experimental Psychology.

“The Rites of Spring” will be the theme of Pitzer’s 10th Commencement, June 9, at which 157 seniors including February graduates expect to receive Bachelor of Arts degrees. Harry Reasoner, newscaster, and member of the Pitzer Board of Trustees, will address the class.

A conference on The Rights of Non-human Nature, sponsored by Pitzer College, the School of Theology at Claremont, and the National Audubon Society, will be held April 18, 19, and 20. Of the Pitzer faculty, John R. Rodman, Professor of Political Studies, and Paul Shepard, Avery Professor of Natural Philosophy and Human Ecology, will participate.
The crisis of limited resources affects students who are private college bound, and it affects the families of those students. As inflation has forced college costs upward and economic factors have cut into family savings and planning for college, the need for financial aid to able students — particularly from middle-income families — has intensified.

From its inception, Pitzer College has placed an unusually high priority on student financial aid, building a student body of true diversity and quality. This priority places stress on a young college’s resources. At present, 48% of Pitzer students are receiving some form of scholarship help!

A representative financial plan looks like this:

Expenses:

Pitzer College charges, including tuition ($2,700), room and board ($1,490), and fees ($130) ............... $4,320
Estimated basic personal needs (books, supplies, laundry, etc.), minimal amount for year ............... 600
Cost of attending Pitzer ............... $4,920

Potential Income:

National Merit Scholarship, California State (or other state) Scholarship, Educational Opportunity Grant (Federal) ............... $1,000
Base parental contribution ............... 120
Summer work, expected savings (for books and personal needs) ............... $600
Work during school year (at 12-15 hours per week) yields ............... 500
Federally Insured (or other) Student Loan per year ............... 1,000
Total ........................................ $3,320
Difference, requiring a Pitzer College Scholarship ............... $1,600

Thus, given the average Pitzer scholarship grant of $1,600, each recipient is bringing to the college about $2,720 (plus at least $600 for personal expenses), from parental help, matching scholarships, and self-help (work and money borrowed).

A donor, underwriting a student scholarship in the amount of $1,600 provides that student with a full year’s education, plus an investment for the College, with good return — by attracting a top-notch scholar who brings in funds and who would have to go elsewhere if the scholarship were not available. Last year 26 students were able to attend Pitzer because they received one of these scholarships after exhausting all other personal resources.

Donors of Pitzer College Scholarships, at $1,600 each, will be honored in Scholarship Lists and at Commencement. An endowment of $35,000 will establish a scholarship in perpetuity. The scholarship(s), for one year or longer, may be named by or for the donor, and public recognition given; of course, such philanthropy may also be kept anonymous if the donor wishes.

The Pitzer College Parents Association has raised $1,000 for scholarships and $500 for emergency loans so far this year. This amount was presented to President Atwell in January. The presentation was made at the benefit for Pitzer Parents at the home of John and Nota McGreevey in Hollywood.

Money raised during this year through contributions by Parents to their program is primarily addressed to the scholarship purpose, as Mrs. Saul Rosenzweig, President of the Parents Association, recently noted. In this way, parents help maintain a good educational environment for their sons and daughters by enabling the college to attract and retain a diversified, well-qualified, and selective group of students.
To the Editor:

I have enjoyed The Participant very much and I am curious as to who does the bulk of the art work. Much of it is very interesting and I have a hard time finding out who did it. Please try and give better credit to these artists who fill in the pages between the articles. Thank you.

Sincerely,

Karen R. Meub, 1970

Dear Editor:

I would just like to use this means to inform the many Pitzer friends of my daughter, June Reed Mack, Class of ’68, of her death from a brain tumor on November 14, 1973. Her death was sudden and she was able to teach up to a month before in a kindergarten class in the Rosemead School District, where she had been for five years.

Knowing how much she enjoyed her four years as a member of Pitzer’s charter class, I am grateful for that and feel that in a relatively few years of life, she lived with purpose and grace.

Mrs. Robert Reed
San Marino

Dear Karen:

Credits for editing, design, art and photography are listed inside the back cover. There you will find credit for all work for which authorship is known. Some is commissioned, some is obtained from a collection of old European publications, and a small amount is done by the Editor. Thanks for noticing.

The Editor.