

PHYSICS and SOCIETY

The NEWSLETTER of the FORUM on PHYSICS and SOCIETY

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LETTER FROM FORUM COUNCILLOR,

EARL CALLEN, ON APS

COUNCIL MEETING, NOVEMBER 18, 1978

The big things of the day were ERA and the Moscow Conference of Collective Phenomena, but there were a couple of other little surprises too:

ERA: We started this one (at 9:00 am, and it went on for almost 3 hours) with a way to go uphill, because POPA was itself divided on this issue. The Division of Solid State Physics had recommended non-scheduling of meetings in states not ratifying ERA. The POPA report to the Council gave arguments for APS's refusal to schedule meetings (signed by Barry Cooper, Paul Craig, Vernon Ehlers, Vera Kistiakowsky, Bob March, and Tom Moss), and against refusal to schedule meetings (signed by Elizabeth Baranger, Harvey Brooks, Bernhard Cohen, Herman Feshbach, Dick Garwin, Ed Gerjuoy, John Toll and Gunther Wertheim).

One of the powerful arguments against was that the Southeast Section of the APS, which sent two representatives to the Council meeting, doesn't want it's students deprived of access to APS meetings. (The Chairman of the Southeast Section had written: "Should ~~the boycott~~ be pursued, we would be forced to see what legal relief we could obtain."). This objection was met by limiting the scope of the resolution not to schedule meetings in non-ERA states to general and divisional meetings (excluding from applicability both sectional and topical meetings.)

Other arguments against were that a boycott is divisive (which it is, but with both sides highly polarized, no matter what the society does is divisive. That's in the nature of strongly felt issues), that a boycott will impede "the advancement

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FORUM ELECTION RESULTS

Brian B. Schwartz (School of Science, Brooklyn College, CUNY) was elected Vice Chairman for 1979.

New Executive Committee Members are:

Edward Gerjuoy (Physics Department, University of Pittsburgh); Kristl Hathaway (Physics Department, American University); and Leo Sartori (Arms Control and Disarmament Agency, on leave from University of Nebraska)

NEW ADDRESS FOR FORUM SECRETARY-TREASURER

The new address of the Forum Secretary-Treasurer, E. William Colglazier, Jr. is:

Center for Science and International Affairs
John F. Kennedy School of Government
Harvard University
79 Boylston Street
Cambridge, Massachusetts 02138

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PROPOSALS FOR FORUM STUDIES:

In the July, 1978 issue of the Newsletter, Forum Chairman Mary L. Shoaf wrote that "the Forum will continue to serve as an information clearinghouse and to introduce members of the Society who share common interests in exploring science-and-society issues."

"To discover whose interests are akin to your own, please send a letter or a postcard to the Forum Secretary-Treasurer: Dr. E. William Colglazier, John F. Kennedy School of Government, Harvard University, 79 Boylston Street, Cambridge, Massachusetts 02138. Please list your name and address and describe your topic in twenty-five (25) words or less. These notices will be published in a column in the next issue of the FORUM NEWSLETTER with an invitation to readers to contact the person submitting a notice."

"The scope of the problem explored, the method of attack, the number of participants, and the nature of the product will have to be determined by those who decide to work together. The members of the Forum Executive Committee will provide help and advice whenever possible."

SATELLITE SOLAR POWER STATIONS: Joseph St. Amand (Physics Department, Boston College, Chestnut Hills, MA) proposes the following study.

An investigation of risks inherent in Satellite Solar Power Stations (SSPS). Considering: damage to life and the environment; the potential for financial failure and energy loss.

RELATIONS BETWEEN RESEARCH AND EDUCATION: Ellen Domb (Physics Department, Harvey Mudd College, Claremont, CA 91711) proposes the following studies.

- 1) ~~The relationship between research and teaching-effects~~ on students, faculty, and institutions.
- 2) Effects of fashions in funding research on the development of higher education.
- 3) She would also like to know about proposals for the study of fusion powerplants - safety, economics, public acceptance.

and diffusion of the knowledge of physics." (Those for boycott counter that only 2.7% of Ph.D. physicists are women. 1% of male physicists are unemployed, and 5.7% of the women. Thus the present social structure is already impeding advancement and diffusion of the knowledge of physics.) A boycott is seen by those against as inappropriately "political" (and by those for as appropriately "human rights"), and finally those against argue that there are many issues members feel strongly about -- the "where do we draw the line" argument. How about abortion? (Someone argued that if we pass this, men will have a right to abortion. But I must have gotten the argument a little wrong.) Anyway, 3 hours later, and thanks to Council, to a turnout of our women members, to the eloquence of Chien-Shiung Wu, and to powerful legislative championship by Willie Fowler, it passed (13 for, 10 against, 2 abstaining):

"Whereas, the Council of the American Physical Society supports the passage of the Equal Rights Amendment as one step in increasing equal opportunity for women in our society, including helping to increase the presently low proportion of women physicists;

"Whereas, The American Physical Society will intensify its activities to assist and to encourage women to study physics and to enter physics as a career;

"Be it therefore resolved that until the present Equal Rights Amendment is ratified, or the present period for its ratification lapses, whichever occurs first, the APS schedule general and divisional meetings, beyond those already scheduled, only in states which have ratified (and not rescinded - should Congress permit rescision) the Equal Rights Amendment."

(The "Whereas" are from a POPA motion by Toll and Gerjuoy which POPA passed and the "Resolved" is from a POPA motion by March and Cooper which POPA rejected. Council pasted them together. It was some morning.) See page 15 for details of the resolution.

Human Rights

Elena Sevilla has been released from Villa de Voto Prison in Argentina, and is a graduate student at Cornell. Kurt Gottfried did a huge job. Miss Sevilla has written to Norman Ramsey thanking APS for important help in obtaining her release.

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APS COUNCIL MEETING (continued from page 3)

C. Pomponiu has been allowed to leave Romania, to take a post-doctorate at Carnegie-Mellon University. Ed Gerjuoy worked hard on this.

Roger Posados has been released from prison in the Phillipines. An offer of a position might be welcome.

Benjamin Levich has just received a visa to leave the Soviet Union.

Sergei Polikanov may also soon be allowed out.

Moscow Seminar

On December 27th - 29th, there will be a third international conference on collective phenomena in Irina and Victor Brailovsky's apartment in Moskow. Our committee on International Freedom of Scientists (Barry Cooper, Chair) and POPA (motion by Brooks and Alpher) unanimously recommended that the APS cosponsor the seminar. The European Physical Society had been asked to co-sponsor, and refused. Council overwhelmingly adopted a motion (Branscomb) that President Ramsey write to Brailovsky, Scientific Secretary of the Seminar as follows: "The American Physical Society is dedicated to the advancement and dissemination of knowledge of the science of physics. As part of that purpose we are committed to act to preserve and to enhance freedom of scientific communication and the exchange of scientific information. This involves the access of all physicists to such information. With this in mind, the Council of the American Physical Society joins me in expressing our earnest hope for the scientific success of the Third International Conference on Collective Phenomena to be held in Moscow on December 27-29. Please convey to your colleagues on the Organizing Committee of the Conference and in the scientific community of the Soviet Union our best wishes for a successful conference helping us toward new advances in physics. We look forward to receiving a full report of the Proceedings of the Conference." (At least 3 American physicists have applied for visas to attend.)

Money

APS budget surplus. Fiscal Year 1978 net revenue = \$445,964.58.

Mostly due to lower Phys. Rev. expenses than anticipated, because of splendid management, and a non-recurring payment of \$82,000 (short term interest on funds held by AIP for APS). The money is going into equipment and publications reserves. APS now has over \$3 million in reserves, and it's burning a hole in Willie Fowler's

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APS COUNCIL MEETING (continued from page 4)

pocket. (Fowler urges that the Society spend more money to advance and diffuse the knowledge of physics.) Have any ideas what to do with some money?

New Officers

Herman Feshbach, vice president (Merv. Goldberger resigned to take job at Cal. Tech.)

Arthur Schawlow, vice president, elect.

Ron Geballe, chairman of nominating committee

Francis Low, Noemi Benczer-Koller, Ralph Alpher, councillors-at-large.

(Those are all very good choices, I believe, from the viewpoint of Forum concerns.)

Foreign Subscriptions

Sam Goudsmit heads a committee to help get our journals to the underdeveloped countries. APS will send Phys. Rev. Abstracts free to qualified colleagues abroad. Send in suggestions. An APS committee is studying the feasibility of sending Phys. Rev. to underdeveloped countries at some reduced rate.

Fluid Dynamics Prize

Here's a funny one. APS is moving toward submitting a proposal to ONR to pay for a prize in fluid dynamics. I'm surprised ONR can use its research money in that way. And I don't care for diverting research funds to prizes. But the Council seems to like the idea; they voted to go ahead with it.

Professional Concerns Committee

There is an effort to destroy it. Last April, Council tabled a motion to eliminate Professional Concerns as a standing committee. The intent of Council, at least as I sensed it, was to get this demoralized committee going again. But vacancies on the committee have not been filled and the ByLaws Committee was instructed to go ahead with a plan to change the APS ByLaws to drop Professional Concerns as a standing committee. The ByLaws change has now been approved by the APS Executive Committee and was brought before Council on November 18 for final approval. But when objections were voiced, the motion to change the ByLaws was postponed until the January meeting. I'm prepared to make a fuss about this, if necessary. We need a Professional Concerns Committee, and we need it badly. Physicist salaries are rotten. And what happened to all that concern about the job crisis? -- Sorry to end downbeat-- Earl Callen

SATELLITE SOLAR POWER STATIONS - ENERGY SOURCE OR SINK?

Joseph St. Amand, Boston College

Nowhere is the ever expanding impact of science on society better illustrated than in the committee rooms of Capitol Hill. There representatives of the scientific establishment plead their cases. Faced with the need to approach Congress for financial support, scientists have become adept at portraying their research as being vital to the health of the nation. Faced with the need to maintain their visibility, members of Congress are eager to be publicly associated with novel applications of technology. The consequences of this symbiotic relationship have not always benefited the nation. This note considers the possibility that the relationship is about to give birth to another flawed offspring. The staging is all too familiar. The crowd clamors for a miracle (an inexhaustible source of clean, cheap energy). The high priests (scientists) promise to deliver if sufficient alms are delivered to the altar of the great god Science.

In the July 1978 issue of Physics Today, Weisskopf reminded us that a holocaust may be the most memorable event to be associated with the physicist's "mastery" of nuclear fission. While the subject of this note is not so profound as MAD (Mutually Assured Destruction), an observation made by Weisskopf is the *raison d'etre* of this discourse. The observation is that on some occasions, the interaction of physics and society results in a state of affairs detrimental to the health of society. It is my belief that it is the responsibility of concerned physicists to identify potential or existing hazards and to inform society of same -- especially when the scientific establishment endorses the activity in question.

On one hand the dangers that concern me in the present instance are easily appreciated: the misuse of the public treasury; a waste of energy and materials; the misuse of manpower. The other concern is the continuing effort on the part of physicists (among others) to convince society that all problems that stem from prior applications of technology can be eliminated by the injection of additional doses of technology.

A proposal to spend twenty-five million dollars in fiscal 1979 on the accelerated research and development of satellite solar power stations (SSPS) recently (May 1978) received a 30 to 1 vote of confidence from the House Science and Technology Committee. The bill (H.R. 10601) would establish the program in the Department of Energy with support for NASA. The bill is another milestone along the path to a long-term program that will test the feasibility of placing large arrays of solar cells in geo-stationary orbits for the purpose of converting solar energy to microwave energy for transmission to Earth.

In 1968, P. E. Glaser, one of the chief architects of SSPS published a paper in Science entitled "Power from the Sun: Its Future". There he introduced the SSPS concept as outlined above. An exhaustive report of debate on the SSPS concept is to be found in "Solar Satellite Power System Concepts", the proceedings of a hearing before the Subcommittee on Space Science and Applications, ninety-fourth Congress, February 20, 1976.

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SATELLITE SOLAR POWER (continued from page 6)

Following its discovery four years ago, the "energy crisis" has been successfully exploited to defend many ventures that would otherwise have met with summary dismissal (e.g., drilling for oil on George's Bank). Presented with a lack of public enthusiasm for space exploration for its own sake, the aerospace industry has been faced with the need to justify post Skylab adventures with arguments as to cost effectiveness. The primary justification for the Space Shuttle is that it is less expensive in the long run. The alleged savings are premised on a number of conditionals (e.g., a large number of flights per year; the elimination of certain existing facilities) that are yet to be realized. Likewise SSPS is being sold to Congress with the claim that the value of the energy supplied to the earth will exceed the cost of developing and maintaining a network of SSPS. An examination of the validity of that claim motivated this note.

The \$25 million for the demonstration project pales in comparison with the \$752 billion estimated as being needed to establish and maintain the sixty SSPS required for a profitable venture. To arrive at these figures numerous assumptions were made concerning the probable cost of the elements comprising the network. Obviously the estimate of overall program cost is no more valid than the assumption that form the core of the cost estimation.

The necessity of making predictions as to the state of affairs fifteen or twenty years in the future is by far the weakest link in all of the arguments advanced by advocates of SSPS. Even the most optimistic studies indicate that many parameters must be improved by orders of magnitude. The claim is then made that all such improvements will be made by the appropriate time. I challenge such claims. It is in the evaluation of such claims that qualified individuals -- with no stakes in the outcome of the faith of the SSPS -- is much needed. At present, all evaluations of the SSPS have been made by individuals or corporations with a vested interest in the outcome. Here the Forum on Physics and Society can possibly play a role.

An example of the vast improvements to be made is afforded by the cost of silicon solar cells. While appearing before the Senate committee on Aeronautical and Space Sciences in October 1973, P. E. Glaser stated that, "The present cost of silicon solar cells for use in spacecraft - about \$175/W - is prohibitive. New methods for producing single-crystal silicon and mass production techniques will have to be developed to reach the goal of less than \$1/W." It is interesting to note that in July 1978 the House approved a ten year \$1.5 billion program in government sponsored solar cell research in the Department of Energy.

A second most important assumption on the part of SSPS backers is the cost of placing one pound of payload in orbit. A cost of \$100/pound to take a payload from earth to a synchronous orbit is assumed. The present cost of placing a pound of payload in a low earth orbit is \$1400! To this must be added the cost of moving from low earth orbit to a synchronous orbit.

A final example of the improvements needed to make SSPS economically feasible is afforded by considering the orbiting solar cell arrays. A power-to-weight ratio of about 60 W/lb. represents the best that could exist in the very near future. Ultra lightweight blankets of over 400 W/lb. are required for the SSPS. An enhancement of 667%. Scores of such examples go into the modeling that results in (according to supporters) an economically justifiable SSPS.

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SATELLITE SOLAR POWER (continued from page 7)

As evidenced above, the primary outcome of most of the studies financed by NASA and ERDA to investigate the feasibility of obtaining useable power from near space have been statements as to the values of performance figures required to yield an economically sound venture. The fact that the requirements and present reality often differ by orders of magnitude is accommodated by postulating rapid advances in technology. The fact that no heavy-lift launch vehicle (an essential ingredient in the SSPS cost estimation) exists is accommodated by stating that NASA is studying such vehicles. While it is manifestly desirable to have such data available, it must be borne in mind that knowledge of the parameters needed for economic viability does not guarantee their existence.

In summarizing a cost analysis of SSPS (NASA-CR-150147, Spacebased Solar Power Conversion And Delivery Systems Study. Vol. 2: Engineering Analysis of Orbital Systems) the Grumman Aerospace Corporation made the following statement.

"A word of caution, regarding the use of the cost estimates and technology advancement projections for each of the program options described is warranted at this point. The data derived were based on extremely preliminary estimating techniques, assumptions and individual judgement, and were not intended for use in establishing quantitative conclusions. Rather, they were provided for use in developing a methodology by which an economic assessment could be made. Thus, the results established using this data should be interpreted accordingly."

A similar statement was made in a report published by Econ, Inc. another firm responsible for economic analysis.

Notwithstanding these admissions, supporters of SSPS claim that these studies and others like them prove the economic feasibility of the SSPS concept.

My complaints about the state of affairs that led to the decision on the part of the House Science and Technology Committee fall into one of three major areas. First of all, almost all the witnesses that appeared before the Committee stand to gain something should the SSPS concept become a reality. Contracts to evaluate the feasibility of SSPS were in all instances awarded to firms that would benefit should the green light be given. Finally environmental considerations were glossed over.

The selection process that yielded the witnesses that appeared before the committees is characterized by a bias in favor of SSPS. Almost without exception, those invited to appear before the committees had something to gain (or represented a firm with something to gain) in the event SSPS were to become reality. Obviously, the review process, to be meaningful, requires a mixture of technically competent witnesses.

For several years, the aerospace industry has vigorously lobbied for such development and demonstration program. Physicists figured prominently in the lineup of experts that briefed the two committees. A question of ethics arises. Is SSPS being promoted because it is thought to be a viable means of providing energy or is the concept being pushed because it would represent the largest single coup in the history of the aerospace industry? I cannot rule out the latter possibility when confronted with the reality of what constitutes current state-of-the-art technology. It is all together fitting and proper that individuals with specialized knowledge in relevant areas be requested to share such knowledge with committee members. What is disturbing is the filtering process that insured that only advocates of SSPS appeared before the committee.

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SATELLITE SOLAR POWER (continued from page 8)

In a determined attempt to insure congressional approval of the billions called for by SSPS, the Sunsat Energy Council was founded last April. Legal counsel is Frank Moss, former chairman of the Senate Aeronautics and Space Science Committee. Initial membership included 52 universities, engineering firms and public utilities as well as nine major aerospace companies. While not registered as a lobbying organization, the Sunsat Energy Council exists solely to lobby for congressional approval of the SSPS concept.

The cumulative effect of SSPS on the environment has received no detailed analysis. Two major environmental concerns are microwave interaction with the atmosphere and with living matter. The initial design calls for sixty SSPS each beaming approximately 6×10^9 W of microwave energy to Earth. Unknown is the effect of such ~~continuous and concentrated~~ microwave radiation (even below the presently "acceptable" upper bound of 10 mW/cm^2) on living matter - including humans. In short, no detailed investigation has been conducted to assess the long term adverse impact of SSPS on terrestrial affairs. Clearly such research is needed and should be conducted by neutral parties.

What - it might well be asked - do I feel might be done to prevent such one-sided presentations to congressional committees? First of all, a Forum sponsored Journal of Physics and Society (Physics and Society, Aug., 1977) should become reality. The Forum could serve as a resource center, supplying committee members with knowledgeable individuals with no ties to the industries most likely to benefit from the proposed project.

My fear is that the concept of SSPS may well prove to be a repeat of the idea of electricity via nuclear fission. Nuclear fission reactors, so the story went, were to provide nearly inexhaustible supply of clean, cheap energy. After the fact we discover that: the stores of uranium are quite finite; the energy produced by fission reactors is neither cheap nor clean. There too the initial costly research was supported solely by the federal treasury. Knowledge thus obtained was then transferred gratis to the private sector when it continues to be used to generate profits.

Because of the numerous and highly significant questions relating to SSPS and known deficiencies in state-of-the-art technology (as revealed by prior and on-going studies of the SSPS concept), now is not the ~~most propitious time~~ to initiate an expensive development and demonstration program. If the SSPS concept is such a winner, one wonders why a consortium of the corporation that would realize the profits from such a venture do not themselves demonstrate the correctness of the approach. This brings to mind the supersonic transport (SST) and the U.S.. In this case you will recall, the aerospace industry was unanimous in asserting that the SST was guaranteed to show a profit. At the same time, it was just as determined to not risk capital.

The potential for loss is not restricted to money or manhours. In addition to the possibility of financial failure is that of an energy drain. At an assembled weight of 18.1×10^6 kgm, each satellite represents a colossal energy sink. The energy drain associated with the manufacture and earth bound transportation of the 18.1×10^6 kgm of solar cells, mirrors, support structures, etc.; the energy needed to transport the

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SATELLITE SOLAR POWER (continued from page 9)

material from earth to a low earth orbit and then to a geosynchronous orbit; the energy associated with assembly in space; an annual maintenance budget. The cost in energy is so enormous that a period of between seven and ten years of operation is estimated as needed just to pay back the energy cost of a single satellite. That is, the energy consumed in manufacturing, positioning and maintaining a single solar power station in orbit is equal to the total output of a 5000 MW power station over a period of seven to ten years. Until a satellite power station delivers an equivalent amount of usable energy, it is a net energy drain on the reserves on earth.

In conclusion it should be said that I feel the conceptual aspects of SSPS are admirable. I do not doubt that the technology will exist (at some time in the future) to generate terrestrial electricity via the SSPS concept (at some unknown cost). I do question the biased studies that profess to demonstrate economic feasibility in the near future. I do protest the lack of concern for environmental matters. In a matter involving hundreds of billions of dollars and the potential of severe radiation damage to living matter and unknown effect on the environment, it is obviously in the best interest of the nation to give serious consideration to the risk involved. A detailed and accurate risk assessment can only emerge from competent neutral investigators. Present debate on the SSPS concept proceeds without benefit of such counsel.

APS MEMBERS: JOIN THE FORUM ON PHYSICS AND SOCIETY

To become a member of the Forum fill this form and mail to:

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I wish to join the Forum and have enclosed \$2.00 in dues*

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FORUM SESSIONS AT NEW YORK MEETING

(AAPT and Forum sponsored)

PHYSICISTS IN UNUSUAL OR ALTERNATIVE SETTINGS

Monday, 29 January, 2:00 p.m.

Speaker: Rosalyn Yallow
Mt. Sinai School of Medicine, CUNY
"A Physicist In Biomedical Investigation"

Speaker: Tjalling C. Koopmans
Yale University
"Experiences In Moving From Physics To Economics"

Speaker: Robert J. Goshen
Goshen & Papernick, Inc.
"Opportunities In Commercial Computer Science"

Speaker: Peter B. Miller
General Foods Corporation
"Marketing Research As Seen By A Physicist"

PANEL DISCUSSION FOLLOWS

SCIENCE AND THE GENERAL PUBLIC

Monday, 29 January, 7:00 p.m.

Speaker: C. P. Gilmore
Popular Science
"The Fundamental Misunderstanding Of Science -
And What You Can Do About It"

Speaker: Florence Skelly
Yankelovich Skelly and White, Inc.
"The Public's Attitude Towards Science"

Speaker: Edward Edelsen
New York Daily News, and National Association of
Science Writers
"Does The Public Understand Science?"

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FORUM SESSIONS (continued from page 12)

FORUM SESSIONS AT NEW YORK MEETING

HAZARDS ASSOCIATED WITH NON-NUCLEAR ENERGY SOURCES

Tuesday, 30 January, 9:00 a.m.

Speaker: Gordon MacDonald
Dartmouth College and MITRE Corp.

~~"Overview Of The Carbon Dioxide Problem"~~

Speaker: James Fay
Department of Mechanical Engineering
MIT

"Safety Hazards Of LNG Accidents"

Speaker: Merrill Eisenbud
New York University Medical Center

"Health And Ecological Effects Of Combustion
Products"

PHYSICS AND PARAPSYCHOLOGY

Tuesday, 30 January, 7:30 p.m.

Speaker: Helmut Schmidt
Mind Science Foundation, San Antonio, Texas

"Is There A Psychokinetic Effect?"

Speaker: Ray Hyman
Psychology Department, University of Oregon

"Physics And Psychic Research -
Perils And Pitfalls"

LETTER: THE EQUAL RIGHTS AMENDMENT, ENDS AND MEANS

Arthur Herschman, Alexandria, VA

TO THE EDITOR:

I wish to take exception to part of Peter J. Gollom's recent letter (July 1978) on "The Equal Rights Amendment and the APS." The particular area of my disagreement relates to his section on "Is refusal to meet in unratified states an appropriate tactic to use?"

To the degree that this refusal means the refusal to schedule future meetings in such states, I have no objections. Meetings are scheduled for a variety of practical as well as personal reasons, from questions as to the availability of adequate hotel space and transportation links, to questions of "proper" geographic distribution and miscellaneous whims of the selection committees. Clearly, the addition of another issue such as status of equal rights ratification does not appreciably change the character of the process.

Where I strongly differ with Dr. Gollom is in his belief that there are only two reasons for not cancelling an existing agreement with a hotel to hold an already scheduled meeting, viz., "the difficulty of rescheduling, and the legal liability of doing so." What Dr. Gollom leaves out is the substantial moral issues involved. In fact, the issues he chooses to consider can be rendered almost moot by sufficiently prompt and adept staff work (as was the case with AAAS experience he notes). The only real issue involved is the one he chooses to ignore, the moral issue.

When a group chooses to hold a meeting in a given hotel, there is usually only a letter of agreement (or even only a handshake) which binds the hotel to reserve its space during a given time period (at times more than ten years in the future). This reservation means that the hotel will not accept other business for that time period no matter how more lucrative that potential business appears to be. (Bear in mind that trade-association conventions generate far more hotel revenues because of food and drink consumption, than do those of scientific associations.) Simply speaking, breaking a "good faith" agreement is an immoral act which can only be justified by those who subscribe to the moral imperative that "the ends justify the means." It has the further **immorality of being a "secondary boycott"**, since the hotel in question has nothing whatever to do with the ratification of the amendment, and it is the hotel which is the principal bearer of the economic loss (brought on by its keeping its part of the bargain).

The immorality is further compounded by considering the next-order victim, the host city, which stands to lose a considerable amount of convention-generated business, a loss mostly borne by its poorer citizens such as waiters, chambermaids, taxi-drivers, etc. Most cities large enough to have convention hotels tend to be urban centers polarized from an otherwise rural state. In all of the cases brought to my attention, the delegations to the state legislatures from boycotted cities had already voted overwhelmingly for ratification (e.g., over 80% in Chicago); ratification did not carry because of the large rural-area vote. One does not have to be a political scientist to know that in these polarized states, no love is lost between the rural and urban constituencies,

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THE EQUAL RIGHTS AMENDMENT (continued from page 14)

and that, from the rural point of view, the city can just as well go down the drain. Thus, a boycott of the city does not sway the vote of a rural legislator. In fact, I know of no state which ratified ERA as a result of a convention boycott. Where are the ends to justify the means? Is harming a hotel which acted in good faith, is taking business from a city which supports your objectives justified just to make an ineffectual political statement?

APS COUNCIL ADOPTS RESOLUTION IN SUPPORT OF ERA

(Text of press release)

By a vote of 13 to 10 with two abstentions, the APS Council adopted the following resolution during its meeting in New York on 18 November.

Whereas the Council of The American Physical Society supports the passage of the Equal Rights Amendment as one step in increasing equal opportunity for women in our society, including helping to increase the presently low proportion of women physicists;

Whereas The American Physical Society will intensify its activities to assist and to encourage women to study physics and to enter physics as a career;

Be it therefore resolved that until the present Equal Rights Amendment is ratified, or the present period for the ratification lapses, whichever occurs first, the APS schedule general and divisional meetings, beyond those already scheduled, only in states which have ratified (and not rescinded--should Congress permit rescision) the Equal Rights Amendment.

The Council's resolution expresses its serious concern about all the circumstances in our national life that, taken together, result in an overwhelming underrepresentation of women in the profession of physics. A majority of the Council feel that passage of ERA will contribute in the long run to constructive changes in those circumstances, and the resolution expresses this view. Council has determined to intensify the Society's activities to encourage women to take up physics careers.

Regarding future meetings, the Council expressed its intention, between now and March, 1982, to refrain from scheduling future general and divisional meetings in states that have not ratified ERA, unless ERA should be ratified prior to that date. This decision does not apply to the sectional meetings of the Society, which are regional in character, nor to topical conferences for which the APS does not in any case select locations. Since Congress has not made provision for past votes rescinding ERA, and has precluded this during the three-year period of extension, the Council will not preclude scheduling meetings in such states until the Courts clarify their status. It should be noted that virtually all of the general meetings and many of the divisional

(continued on page 16)

APS COUNCIL ADOPTS RESOLUTION (continued from page 15)

meetings of the Society for the period to March, 1982, are already scheduled and will not be affected. Thus, no contractual relationships are altered by this decision.

The Council did not associate itself with any other organization in relation to the ERA issue, and has not voted to support any particular movement. It does, however, have the responsibility to plan future meetings in a manner that is faithful to the purpose of the Society, the needs and sensitivities of its members. The Council's action states the Council's policy and provides guidance to itself in future arrangements for meetings.

PHYSICS AND SOCIETY

Editor

MARTIN L. PERL

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