

INTER-OFFICE CORRESPONDENCE

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P+P

ENVIRONMENTAL

SCIENCE

FROM: AMB

DATE: March 26, 1971

TO:

RWR	separate	<i>RWR</i>
SW	copies	

COMMENTS:

SUBJECT:

Comments on Developments in the Quality of the Environment Program known to AMB since February, 1968

Since I have been associated in a small way with development of the Quality of the Environment program, and in view of present plans to greatly diminish my efforts in the program, it appears desirable to record some of the more salient aspects of the program as they are known to me. Diaries are on file on all aspects of this program with which I have been associated.

In late November, 1967, when I was in New York for the national meetings of the Entomological Society of America, I visited with JGH and mentioned my hope to be able to retire in February 1968, and also that a number of institutions and organizations had been asking me to consider affiliation for effort abroad and/or in this country, none of which I really wanted to do. He readily detected the real purpose of my visit and kindly asked if I might be interested in part-time affiliation with The Rockefeller Foundation. Naturally, this elated me very much. He said if I could come back the next day, he would meanwhile explore possibilities with officers about potential association with RF. When I visited with him the following day, he indicated that for several years officers have been giving consideration to a possible program in Environmental Quality. Now the decision had been reached to give serious consideration to this matter, the object being to determine if areas could be identified in which work, with modest RF support, could be expected to make a real impact. He said that if no such areas could be identified, RF officers would forget about development of a program on environmental quality. WMM, KW and KWT were present during this discussion. In view of serious environmental quality problems in southern California, with which I have been quite familiar, I felt this would be an interesting and challenging assignment. Consequently, arrangements were made for my appointment as Consultant, January 1, 1968.

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As it turned out, plans did not mature for me to retire February 1, 1968, largely because the selection of my successor became complicated, and actually, appointments were not made until late May, effective July 1. Thus it was necessary for me to continue University functions until June 30, 1968. Incidentally, it is interesting to note the operation of Parkinson's Law in regard to my replacement. As Dean of the College of Agricultural Sciences and Director of the Citrus Research Center and Agricultural Experiment Station, the entire administrative operation consisted of 1 FTE (Boyce), 0.5 FTE Assistant Dean for Instruction, 1 Administrative Assistant and 2 secretaries. The new crew that took over July 1 consisted of 2.5 academic FTE, 2 Administrative Assistants and 3 secretaries.

Failing to be able to retire February 1, 1968 as I had hoped, there was no opportunity to do anything of importance on this environmental quality matter until early October. However, when I was in Washington, D.C. in May 1968 in connection with national committee work and other matters, I did spend several days visiting with the National Air Pollution Control Administration, the Federal Water Quality Pollution Administration and the Bureau of Solid Wastes, as well as with the Agricultural Research Service and the Cooperative State Research Service of USDA, getting a general background on the programs in progress on environmental quality.

When initial arrangements were made with RF, my aspiration was to begin work on the assignment about February 1, and hopefully progress it to a decision point by late June or the end of July at the latest. I had indicated to JGH initially that for many years I had promised Janet that we would take a vacation upon retirement, and that we had scheduled during the summer a three-month trip to Southeast Asia and the South Pacific, which I felt I should carry out. In view of these circumstances, WMM indicated that I should get this vacation out of the way immediately upon retirement, and then start in on the RF assignment when I returned in the fall.

I came to New York in early October 1968 and began a review of a great deal of literature in the environmental area. WMM indicated that he would like to have a sort of a current status paper on environmental quality by the end of November, which would be useful in stimulating interest by officers to consider a fairly early decision on a potential program in this area. Before beginning to work on a draft of this material, I spent several days in Washington, D.C. in mid-October, to learn more about the federal

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work on air, water, and soil pollution, and solid waste management. Also, these subjects were discussed with knowledgeable staff members in the Office of Science and Technology (OST).

SEE WMM
MEMO
2/26/69

A draft of sort of a status paper on environmental quality was prepared early in November for WMM, which he used in preparing other drafts. I was away and did not see the first three drafts he prepared, but draft #4, dated 2/24/69, was reviewed by me. These particular drafts, with comments, are enclosed. (Attachment 1). After working over these drafts and considering additional material, in the spring of 1969 it was decided that we really did not have a good enough grasp of the situation, and especially of prime opportunities, to proceed at that time with serious consideration of a formal program on environmental quality.

To backtrack, with fairly good background of the federal efforts in environmental quality, it was decided by the middle of November of 1968 that it would be helpful to visit a number of universities to learn about their interests, efforts and capabilities in environmental quality matters. Before the end of 1968, I had visited the universities of Minnesota, Wisconsin, Illinois, Toronto, Michigan, and Michigan State. The results of these visits made it clear that many more institutions should be visited in order to get a better picture of potentials in the universities. Therefore, during January of 1969, I visited the universities of Purdue, Ohio State, Cornell, North Carolina State, and Penn State. Also during this period, I visited OST in Washington, D.C. and the Consumer Protection and Environmental Health Services of HEW in Washington, D.C. and at Rockville, Maryland.

By this time, such a large amount of information had been accumulated indicating opportunities for impact from RF support in the very broad area of environmental quality that WMM and I decided, tentatively at least, that it might be desirable to consider concentrating effort in one major area of the subject. I suggested the area of fresh-water environment with its many ramifications. We discussed this matter with JGH and he said to explore that possibility. Consequently, WMM asked me to provide a list of prominent people who would be knowledgeable in the fresh-water area, and also knowledgeable in the general environmental area, for consideration as invitees to a meeting. A long list was developed, which was pared down to fourteen names; and I arranged by phone for them to attend the meeting that was scheduled for March 6, 1969. Draft was made of a follow-up letter confirming the date and providing some background information, which was edited by WMM and mailed to each of the invitees. Copy of the

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*See 100 Quality of Human Enviro
Conference*

letter with the list of the participants, together with notes on the meeting, are enclosed (Attachment 2). When the meeting concluded, WMM asked me to prepare a statement for him promptly, providing comments on the possible focus on the fresh-water/soil environment. This material was prepared on March 7, and copy is enclosed (Attachment 3). *see AMB/WMM memo 3/7/69 in this file*

The consensus of those attending the meeting on March 6 was that a focus on the fresh-water environment would be very good. However, from later officer discussion, it was decided that it would be better not to focus all efforts on the fresh-water environment, instead to broaden the thrust and include also, unique opportunities in other areas.

The critical pesticide problem was one of the areas to which extensive investigation was given, which culminated in the decision to hold two meetings, one featuring pesticides and the other featuring alternative and/or complementary methods of pest control such as insect hormones, pheromones, and sterilants, etc. I selected the leading authorities to attend these meetings, and made arrangements with them on the telephone, and prepared draft of the letters that went to each invitee. The pesticide meeting was held on June 24 and the other meeting was on June 25, 1969. Several invitees attended both meetings. Copies of the letters to the invitees, list of the names for each conference, and the diary on each of these two conferences are enclosed (Attachment 4).

During the period from early January until the end of July of 1969, I visited the following institutions and organizations other than those mentioned earlier for that year (i.e., Purdue, Ohio State, Cornell, North Carolina State, and Penn State): Texas A & M; Louisiana State University; University of California at Davis; University of Oregon; Oregon State University; University of Washington; University of British Columbia; University of Arizona; and Utah State University; Monroe County Community College, Monroe, Michigan; Oak Ridge National Laboratory, AEC; Hanford National Laboratory at Richland, Washington, AEC; U.S. Department of Interior's National Water Quality Laboratory at Duluth, Minnesota; University of Minnesota's Limnological Laboratories at Duluth, Minnesota; AEC Headquarters at Germantown, Maryland; and OST and NSF, both in Washington, D.C. Also I attended several meetings during that period such as the National Pollution Control Exposition and Conference at Houston, Texas; the American Chemical Society Symposium on Environmental Quality in New York City; and the National Academy of Science's Workshop on Quality of Rural Living.

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See also
AMB
Fellows
7/30/69
8/1/69
8/7/69

Toward the end of June 1969, it had become more apparent to WMM and me that consideration should be given to assist one or more universities to develop campus-wide programs to enable sharp focus on environmental quality. Therefore WMM suggested that I draft a letter to go out over my signature to those universities that I had found in my survey to offer the best possibilities for potential support in the development of campus-wide environmental quality programs. The draft letter was edited by WMM and sent on August 1, 1969 to the following thirteen institutions: the universities of Michigan, Michigan State, Ohio State, Wisconsin, Minnesota, Cornell, Illinois, Purdue, Penn State, Oregon State, UC Davis, North Carolina State, and Utah State. Copy of the letter is enclosed (Attachment 5). All universities responded fully and enthusiastically, with realistic answers provided on all the questions. Also, large amounts of supporting material were supplied in most instances. On the basis of the responses received, together with observations during my visit, it was clear that each campus had a great amount of expertise in environmental quality matters, but in most instances it was diffused and not organized to focus on the subject in a coordinated, interdisciplinary manner. However, each of the universities offered good possibility for effective programs that could conceivably justify support to become a Center of Excellence in Environmental Quality.

On the basis of all the information obtained and digested to date, officers decided in about October to recommend a new program on Quality of the Environment at the Trustees' meeting in early December 1969. Meanwhile, the University of Michigan had made a formal proposal for support. Our evaluations indicated that Michigan appeared to offer the best promise of any of the universities thus far considered for support of a campus-wide graduate training and research program on environmental quality. Consequently, WMM and I visited the campus for full discussions on this matter. We were fully satisfied that the proposed program was very worthy of support.

Officers recommended three major programs for support in the recommended Quality of the Environment program at the December (1969) meeting of the Trustees. They were: Resources for the Future - on residuals management (developed by Social Sciences and WMM), \$500,000; University of Michigan for campus-wide program on environmental quality, \$750,000; and universities of Cornell, Illinois, California, Berkeley and Riverside campuses, for pesticide research, \$600,000. All programs were approved by the Trustees.

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I prepared draft material for WMM for use in connection with the docket items for the December Trustees' meeting and for his so-called white paper on Science and Pollution, which was issued about that time. Enclosed is a very poor reproduction of one of the drafts of WMM's paper on quality of the environment, dated November 14, 1969. The original cannot be located. Enclosed also are copies of other material relevant to the new program at that time. (Attachment 6).

Early in 1970, after RF Trustees had approved the new program on Quality of the Environment, WMM asked me to develop a list of names of people whom I had met at various universities during the visits, or that I knew otherwise, who might be considered as candidates for Director of the QE program. As the months went by, I kept adding to the list and kept urging WMM to arrange for the selection of a Director of the program, since my association with it was only temporary and in any case, the new Director ought to develop his own program, because he would have to live with it. In early June (1970) WMM asked me to arrange for a meeting here with some of the best qualified potential candidates to discuss the present program and additional future opportunities for possible inclusion in it. Additionally, this meeting, held on July 1, would provide the officers an opportunity to gain general impressions of those potential candidates. I made arrangements by phone with each of the invitees, which was followed up by a letter from WMM. Copy of that letter and my diary of the meeting are enclosed (Attachment 7).

About the middle of July (1970), WMM became ill with a coronary, which indicated that, at least, he would be out for several months. (WMM died in late July.) Therefore, JGH phoned me in Riverside and asked if I could return to New York at once and continue work with the QE program. This was done, and when docket items had been completed for the December Trustee's meeting, JGH told me I could return to Riverside for Thanksgiving and remain through December, and he encouraged me to return early in 1971.

During 1970 the following principal grants were made for QE: Harvard University, research on insect control (hormones), \$250,000; Monroe County Community College, experimental program to develop technical training, \$45,000; Cornell University, UC Berkeley and Riverside, research on insect pheromones, \$225,000; Michigan State University, water quality management, \$250,000; University of California at Davis, campus-wide program on environmental quality, \$284,000; University of Arizona, research on air pollution, \$95,000; Cornell University, agricultural wastes management, \$600,000; Universities of Texas A & M, Mississippi

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State and UC Davis, studies on plant resistance to insects, \$500,000; Pennsylvania State University, interdisciplinary program on research and training in environmental studies, \$750,000; and Utah State University, interdisciplinary program on research and training in environmental studies, \$600,000.

It can be said that all of the above-mentioned grants, except those indicated later, were initially generated from my visits to the concerned campuses, or from personal contacts. The exceptions are: Monroe County Community College - the initial proposal was sent to WMM without any previous contact, and I visited the campus for evaluation purposes, being very favorably impressed; and Universities of Texas A & M, Mississippi State and California at Davis - developed by JJM.

The following officers visited the indicated campuses to evaluate proposals received:

- UC Davis - WMM and RKD
- Michigan State - WMM
- Cornell (agricultural waste management) - SW
- Texas A & M, et al. - JJM
- Utah State - RWR, MPT and AMB
- Penn State - WMM (in 1969), SW, RWR, RKD and AMB (in 1970)

Other grants for QE made in 1970 with which I was not associated were: Columbia University, for environmental pollution, \$25,000; MIT, for summer study on global climate and ecological effects of pollution, et al., \$25,000; University of Colorado, for development of classroom materials, et al., (BSCS program), \$4,500; and MIT/Cal Tech, for Clean Air Car Race, \$25,000.

SW was appointed Vice President for Agricultural and Natural and Environmental Sciences, effective December 1, 1970.

Three major proposals on which I expended some effort during 1970 were: Boyce Thompson Institute for Plant Research, for research on the maintenance of a functional environment on the lower portion of the Hudson River estuary (\$386,000) - recommended by officers for funding in April 1971 - WMM and I visited BTI in June 1970, and SW and RWR visited there in early 1971; the Academy of Natural Sciences, Philadelphia, for research and training in fresh-water biology - additional funding of \$293,000 for existing program approved February 1971 (visited by WMM and JMW in June 1970 and by SW and RWR in January 1971); and the University of Illinois, for a program on environmental quality with major focus on nitrogen - not yet approved (WMM visited the campus about June, and RWR was there in November 1970).

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A very large number of proposals of various kinds were received during 1970. It was necessary to decline most of them. Following my return to New York in mid-July and until late November, 1970, RWR and MPT participated fully in the review of all proposals and in progressing those that were recommended for funding. ACB, RKD and KWT participated in review of some of these proposals.

Following my return to New York in early January 1971, I assisted in review of many proposals and commented on their disposition.

RWR was appointed Director of the program on Natural and Environmental Sciences, effective February 1, and I assisted him in relevant matters until departure for Riverside at the end of March.

Since a high percentage of the projects that have been funded in the QE program up to the present time were initially generated by my visits to institutions, and for many other pleasant experiences incident to my association with officers of RF, I feel that my efforts in this new program are fully rewarded. It has been a pleasure and privilege to assist RF officers in this matter.

A. M. B.