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N. S. NOTES ON OFFICERS' TECHNIQUES

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N. S. NOTES ON OFFICERS' TECHNIQUES

Foreword

The N. S. division is about to "break in" one or more new staff members. This sounds like a somewhat violent process; and it is true that the almost unique character of the activities of The Rockefeller Foundation makes indoctrination both difficult and necessary. The only real way to become experienced in this strange but marvelous business is through experience itself. Nevertheless it does seem that those of us who, for a good many years, have barked our shins against hidden obstacles, blushed at our blunders, and learned the hard way, ought to be in a position to write out a few helpful hints as to What the Young Officer Ought to Know.

One can (and for certain purposes clearly should) describe the activities of RF officers in broad philosophical terms. The intent here, however, is quite other. At the grave risk of seeming to indicate that this business can be done by rule, these notes will be very specific.

Being specific, they cannot hope to fit all the great range of situations which confront officers. Being specific, they must be restricted to a modest level of procedure. The real problems of officers are always those which require not rules and precepts, but shrewdness and patience, imagination and wisdom. The purpose of these notes is to help avoid minor entanglements and thus to help free the energies and time of the officers for their real jobs.

These notes have been submitted, in tentative drafts, to the central administration and to the

other divisions of the RF; and anything judged specially unwise or naughty has been removed.

Nevertheless these notes are intended to apply to N. S. It is to be expected that both the problems and the traditions of the divisions will differ.

There has been no attempt to be either logical or literary about jotting down these notes. The list of entries is still incomplete, and may be supplemented from time to time.

It is hardly possible to write out such notes as these without appearing to pose as the Sage of 49th Street, and as a professional purveyor of distilled wisdom. The reader will just have to believe that this has not been intended.

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NEGOTIATIONS WITH PERSONS OR GROUPS SEEKING AID

Approach to RF

Every sane individual, whatever his location or connections, should be made to feel that he has had a fair chance to state his case, and that his statement has been received with patience and courtesy. Officers should avoid the professorial sin of lecturing the visitor concerning the RF, science, and the world in general; and be sure that he gives the visitor a full chance to tell his story. When seeking information, officers should, in the language of radiation theory, be good absorbers and very poor emitters.

This does not mean - how often, before I am done, I will have to start a paragraph this way: this is a complicated business, and one describes it by overshooting the mark, drawing back a little, and thus gradually disclosing the impression really intended - this does not mean that an officer need expose himself foolishly to the steady demands of the front doorbell. We have secretaries who can handle preliminary details and screen off inappropriate visitors. We can save ourselves time by asking that applicants write out statements for us.

We have no application forms for grants, and if the point arises, applicants should be assured that in laying their hopes and needs before us, they are free to proceed in whatever way is most natural and agreeable to them.

Officers should be sensitive and thoughtful in avoiding giving to anyone - especially personal acquaintances, friends of friends, previous associates, persons who happen to be geographically accessible - the impression that they have a specially ready access to our ear.

Assurances and Commitments

When in warfare a commander is so unwise as to commit himself to an advance beyond the point he can really defend, then he is in for a very bloody retreat. Officers should not only remember this: they should realize that it is unwise and unnecessary ever to commit themselves in advance to any assurances whatsoever - ever to suggest or even to hint that action on a result will be favorable. If the action turns out to be favorable, then the hint is unnecessary. If the action turns out to be unfavorable, then the hint would be disastrous.

Officers should always make it clear that RF decisions rest ultimately with the Trustees; and that it is improper to attempt a forecast of Trustee reaction. The wise officer remembers that it is improper, even in circumstances where he is quite certain that it is possible.

Impersonality

Any officer (who is presumably a human being) may at times be tempted to experience the sense of power that goes with being a Scientific Santa Claus with a pack full of blank checks. Indeed, there actually have been officers who would carry out negotiations on a personal basis - "I think I can succeed in persuading...etc., etc."

One way of avoiding this dangerous and obviously wholly objectionable personal element is, in the conduct of all inquiries and conversations, to talk and act in such a way as to make clear that the officer is only the responsible agent of first his immediate colleagues, second the central administration, and finally and most important, the Trustees. Thus officers often find it useful to use such phrases as "You understand, of course, that your proposal will have to be discussed with and studied by my colleagues." In the Paris Office the NS fellowship administration always used to refer to the necessity of submitting fellowship proposals to "The Committee." This committee did not exist formally. The language was justified by the fact that various aspects of the appointments were ruled on by different persons; and the language removed off approvals the sticky honey of personal favor, and removed off declinations the unpleasant taint of personal responsibility.

Good Salesmen

A few scholars are very good salesmen for their projects. Some are very effective and also very reasonable in their proposals. Some are unpleasantly insistent and pushing, whether the request is for so little that we should not be concerned, or for so extravagantly much that they should be ashamed. Other scholars are very poor salesmen for their own ideas and needs - shy, or modest, or reticent, or uninterested in money and inexperienced as to what it can do for them, or in extreme cases even sullen and pugnacious over the idea that some person with a vulgar lot of money is presuming to take up a scholar's time and tell him what to do.

The RF officer must train himself to disregard both good and bad salesmanship, except for those cases where the same personality traits that explain the salesmanship would handicap the project. There is in this country an extremely shy, introspective enzyme chemist who sometimes practically urges us to stay away, and sometimes complains quite unpleasantly. We give him some support, for he is outstandingly good: but we do not give him nearly as much as though he were the sort of leader who could attract and train a fair number of attractive and normal young men. In another case, there is a nutrition man who is so confidently insistent and unreasonable in talking and writing to us that I fear we have given him somewhat more than he deserves, in our attempt to lean over backward and not punish him scientifically for being so unpleasant personally. There is one professor - actually a Scotchman at Edinburgh, although this sounds like a trumped-up illustration - who is so pinchingly parsimonious that we have to urge on him more than he would otherwise ask for. When Rob Millikan or Jim Angell used to show up, in their prime, we would lock the safe, throw the key out the window, and put cotton in our ears: and then afterwards study the written

proposals very carefully and try to do the right thing. These are historical illustrations, but the race of Millikans and Angells has by no means died out.

Formal Approval of Requests

There is, however, one requirement concerning requests which (at least in NS) is never waived. We insist on having in writing a statement from a high administrative official of the institution in question indicating his approval of the request in question. This high official is usually the president, but may sometimes safely be a dean.

This requirement is based on experience. The RF must meticulously avoid any act which could be interpreted or even misinterpreted as an attempt on our part to force support on an institution in order to accomplish purposes which we seek, but which are not part of the genuine internal interests of the institution. This rule is not merely protective; it has a positive aspect. It is essential in helping assure that our activities serve the broad, integrated, purposes of institutions.

A written approval of a request does not wholly meet this situation, but it is important insurance. (Sometime get an old-timer to tell you the story of A. Lawrence Lowell's letter to the RF, pointing out that we were not running Harvard. A pleasant sequel to this letter was the fact that the first project WW ever negotiated for the RF was with a Harvard professor, and neither WW nor the Harvard professor remembered to get the approval of Mr. Lowell. Oh yes, as O. Henry or A. Woolcott would remark, the Harvard professor was a chemist named Conant.)

Declinations

While requests are often discouraged in conversations, the actual declination should practically always be made in writing. For one thing, an oral declination may give the impression of casual or insufficient consideration. But the main point is that it is almost impossible to give an oral declination without being manoeuvred into explanations. And explained declinations always bounce back. Almost as sure as taxes, the petitioner will return within a year and say; "Doctor, you did us a great service in declining our request last year. Your reasons for the declination were absolutely sound, and in fact you put your finger precisely on the weak spots of our set-up. You will be very happy to know that we have now completely remedied these difficulties. And so, with eager confidence, we are now back to you with a new request which has been drawn up in exact accordance with your own advice."

Written declinations should be brief, firm, kindly, and should be equipped with no handles which the petitioner can grab hold of. For example: "The request which you sent us on ... has been carefully studied by the officers here. I regret the necessity of informing you that The Rockefeller Foundation is not in a position to furnish the requested assistance. I am sure that you will understand that we receive so large a number of requests that it is possible for us to approve only a small fraction of them."

Then in case the project is really a worthy one, one might add: "May I express the hope that you will succeed in finding elsewhere the support necessary to go ahead with this interesting plan."

To say, in a declination that "it is not possible for the RF to ..." would almost always be

untrue. To base a declination on formal program considerations may sometimes be justified, but is seldom necessary and usually unfortunate. The fact is - and we are proud of it - that our program is always flexible and is frequently disregarded: so that "program" is a rather lame and almost a shady reason for a declination.

Transfer of Grants

Very frequently we are waited on by say, Professor Stinkmeister of Chilombia University who says: "I have a fine offer from Princeyard, and I would like to know if I can transfer there my present grant which still has three years to run. Or if this is not possible, can you assure me that I have as good a chance of getting RF grants at Princeyard as at Chilombia; and what in general do you think about the move?" Our answer is: we wish to avoid as completely as is possible the giving of any advice or assurance which would influence the transfer of personnel from one university to another. If you decide to leave Chilombia, the present grant cannot be transferred.* If you do go, then we must treat the new situation de novo; and we are not prepared to discuss it until after you are well settled down in the new job and have thus had a chance to know in dependable detail what your needs and possibilities there are.

This sometimes seems a little rough; but practically always the man sees, either at once or eventually, that it is sound.

*It might continue on at Chilombia, or it might be terminated after a short transition period. This depends on the nature of the grant. The latter occurs in the case of grants specifically tied up with an individual; and in these cases the legal resolution passed by the Trustees contains such a clause as "it being understood that if for any reason Dr. Stinkmeister ceases to be in active direction of these researches, there shall be no commitment for more than one year thereafter, and the situation will be reviewed by The Rockefeller Foundation and Chilombia University."

Advice to Recipients of Grants

Frequently persons come to us, after grants have been made, and with the very best of intentions and with the friendliest and most complimentary motives, ask our advice about the management of the project. The answer in almost all cases should make it clear that while we are pleased that they want to ask us, it would be inappropriate for us to respond. We recommended the grant precisely because we had confidence in their technical competence and in their judgment. They not only have complete freedom to decide these details for themselves; indeed, it is precisely their job to do so, and not ours.

And yet this general principle should not be allowed to paralyze the officers in those cases where they are sure that their advice and help on some situation is genuinely wanted. Usually this advice and help, which is a real and important part of an officer's activities, should be introduced into the earlier planning stages - i.e., before the grant is made. A grant once made should be like an adolescent son or daughter: the parent is deeply concerned and may even be worried; but he should have the good sense to realize that his personal contribution to the situation is essentially over, and the child must stand on its own feet.

Letting Go

Our parental pride in the projects we help start is not so intense that we are reluctant to see the young projects grow up and strike off for themselves. In fact, we are always pleased and gratified when any project we help start proves to be good enough so that someone else wants to support it.

This is an entirely natural reaction, easy to adopt, when the support is assumed by the recipient institution. It sometimes requires a little philosophical calm when one of our projects is picked up by another Foundation, and then crowed about a little by them. But in the long run we do well to accept this silently and pass on to other opportunities.

Diaries of Interviews and Visits

It is an old, proven, and treasured tradition of the RF that officers write diary accounts of all interviews of any importance, and of trips. It is not necessary that these observe all the niceties of elegant grammar. Succinctness, clarity, accuracy, and completeness of essentials are more important than Johnsonian sentences. Many details can be put in very compact form by stringing together key words or phrases between dashes, with no attempt to write complete sentences. On trips, however, and specially on foreign trips, the other officers greatly appreciate a more narrative diary which gives illuminating hints of political or social background.

In carrying out interviews and in making the diary record, one must guard against unconscious delusion. For example an officer, interested in one phase of program, eagerly says "Professor X, you are interested in nerve physiology, are you not?" Professor X may be primarily and in fact almost wholly concerned with some related field, such as, say, muscle physiology. But it just doesn't seem polite or politic to him to say "No, I am not." And so he says "Why yes, of course I am." And down in the diary may go "Professor X is deeply and primarily interested in nerve physiology." The moral is obvious. Ask a man what he is interested in and give him a real chance to answer. Don't tell him.

Diaries are specially important to us because of our great reliance on conversations as contrasted with correspondence, and on travel* for first-hand impressions as contrasted with buying out of a catalogue.

*The coat of arms of the Foundation officer bears the motto "Solvitur Ambulando."

Entertainment

Officers should remember that many persons they meet in foreign countries are, by our standards rather poor and very proud and sensitive. Even within the United States, the professors are not specially flush with spare cash. These are some of the reasons why officers should entertain official visitors with taste and modesty, but never with ostentation.

But these are not all of the reasons. It took years really to convince the public that the founders and officers of this institution treat the available money as a serious public trust. The magnitude of the resources makes the institution more, rather than less, careful. Especially in Latin countries, the pains we take to use our dollars carefully causes initial astonishment, but eventual respect.

One minor evidence of the RF attitude toward the careful use of money is the fact that the officers operate out of simple offices - nothing like as elegant or for that matter as comfortable as those which recipients of our grants often have and sometimes obtain from our funds. Professor Breasted, of the Oriental Institute at Chicago (which has received very large Rockefeller support) had an office truly oriental in splendor, with hidden sliding doors in the carved oak-paneled walls. The Cambridge University undergraduates, when they sit down in their wonderful library built and furnished with RF funds, enjoy the use of chairs which are ever so much better (and are probably far costlier) than those to be found in our offices. But for ourselves, we are more concerned with what Rebecca West had in mind when, speaking of the fantastic Serbian leader Karageorge, she wrote that he had "that strange,

almost mystical prestige which is accorded to a wealthy man who renounces the more obvious enjoyments that his money might buy."

An officer should discourage others from offering him entertainment which has any general social flavor. Our trips are business trips. We cannot afford to become socially indebted to anyone, at least on any important scale. In general, we prefer to give, rather than receive, what entertainment (luncheon or dining bill for the person or group you are discussing matters with) is necessary to the efficient and pleasant conduct of our business. Being business rather than social, there should be no incentive toward luxury or display. This does not mean, of course, that one necessarily takes instructors to Horn & Hardart's (although a young scientist from Europe might be very much interested), nor does one hesitate to go to a decent, dignified, and (if possible) quiet place even though it is not cheap. But one should hesitate to offer hospitality which would be outside the natural and reasonable possibilities of the recipient, did circumstances require him to reciprocate.

One possible interpretation of the above comments would be incorrect and unfortunate. In saying that our contacts are primarily business contacts and not social contacts, one should not mean that it is undesirable to get to know the scientists with whom we work. On the contrary, the interests and the general behavior of a scientist outside his laboratory - say in his own home - are by no means irrelevant and unimportant. Thus it is certainly not unfortunate or improper to visit, on trips, a scientist in his own home. The real point is that we are not properly concerned with social relations which conceivably come under the heading of "society"; but are definitely interested in personal social relations of a simple, natural, friendly sort. The

criterion should be: will this social contact lead to personal relations which are simpler, more relaxed, more natural, more friendly, and more informed: or will it lead to personal relations which are actually more strained and artificial, shadowed by some hint of personal indebtedness?

Visiting Foreign Laboratories

When an RF officer makes visits to foreign laboratories certain thoughtful precautions will add to the informality and success of the calls. It is a little too abrupt and informal to come without any warning; but the advance letter should be carefully phrased to avoid any possible implication that an official deputation from the RF is about to descend upon the university. I remember, for example, one occasion on which a great foreign university was so definitely given this impression that the officers, on arrival, were confronted with printed copies of the schedule of visits and other functions! Instead of telling Professor X that you are coming to Aberdeen to see him, write him that you are going to be in Aberdeen, and want to drop in on him.

A formal tour of the laboratory with the head professor is usually unavoidable. Be interested and appreciative, even if it is all pretty familiar, and perhaps rather dismal. Don't use up time and break his heart by describing gorgeous installations which we have in the U.S. If it can be arranged tactfully, get a chance to talk with the younger investigators alone - that is, with the Herr Geheimrat not present. Talk with fellowship candidates in their own labs, sitting on stools and smoking with them, rather than interviewing them under more formal circumstances. Talk about their work, their training, their families; seeking some initial topic that will put them quickly at their ease.

Often it is sensible to call on one professor, and then have him phone one or more colleagues to help make arrangements for other calls. This avoids the necessity of making imposing arrangements in advance about schedules. But one must, of course, avoid giving any one professor the impression that he is a sort of local RF agent.

There will often be hints intended to determine whether the visiting RF officer wants or expects formal entertainment. These can almost always be avoided without discourtesy; although a short official call on the rector or dean or provost is practically routine, in Europe, and should be accepted. This is by no means always a waste of time; because you can often get in this way a good impression of the scientist's local standing, and sometimes useful information about the general plans of the institution.

If you have accepted any hospitality, write thank-you notes promptly, so you won't forget.

COMMENTS CONCERNING REQUESTS AND ACTIVITIES

How Do Officers Get Sound Advice?

We are skeptical about written recommendations, especially letters recommending a man for a fellowship. The writer of such letters may not have as high standards as we do, nor may he have in mind all the criteria which seem important to us. Some otherwise respectable scientific citizens, moreover, when asked to write a letter recommending Mr. A. for a fellowship apparently say to themselves "Well, it certainly won't do A. any harm and may do him some good. I hate to stand in his way, especially since this Foundation has so much money that they may as well give this fellowship as not."

In other words, the average person is neither very critical nor very frank about written recommendations. He assumes that the backers of other candidates will keep still about faults and limitations, and will use pretty rosy adjectives. So, in fairness to his candidate, he does the same.

The remedy for this involves a lot of time and patience and energy. It involves slowly building up a relationship of close confidence with a large number of shrewd and hardheaded scientists; and talking with them about young men so continuously and generally that we build up in our own files an inter-locked web of objective and dependable information.

And even in talking with our advisers, we try to avoid direct questions such as "Professor X has asked for a grant - or Dr. B. is a candidate for a fellowship. What do you think?" Rather we are likely to say "Whom do you consider the outstanding workers in this country in the field of fatty acids?" or "Who are the most promising men, say between

twenty-five and thirty-five, interested in biochemical genetics? Who are going to be the leaders, ten and twenty years from now, in cellular physiology?" With a few such lists, one then makes a point of asking the same question of the men on these lists. And in time some dependable facts emerge out of the fog.

There is a truly remarkable contrast, both in the psychology of the man questioned and in the resulting objectivity of the replies, between the questions "Is Mr. A. good?" and "Who is good?". One might cite, as a comparable situation, the fact that if you ask a large number of persons whether they listen to the Philharmonic-Symphony Concert on the radio Sunday afternoon, some 65% of them state that they do. But if you ask a large number of persons what radio programs they listen to on Sunday afternoon, only about 35% mention the Symphony.

It is necessary to keep one thing in mind when asking any adviser whether or not he favors a proposal which we submit to him. This adviser is very likely to compare two possibilities, namely "that the RF finance the project" and "that the RF not finance it." Within the RF, however, the more realistic comparison is between the proposals "that we finance this particular project" or "that we finance instead some other project." The adviser cannot know what the alternatives are, and accordingly his advice is necessarily limited in value. It makes the matter concrete to realize that it is essentially meaningless to ask "Is it a good idea to give Professor Rhine at Duke \$500,000 for research in para-psychology?" If the money is to come from an old maid in Cambridge who will otherwise use it to endow her favorite cat, then the answer is yes.

Perhaps another illustration will make the point still clearer. The RF was asked, years ago, to contribute large financing to Biological Abstracts. The proponents of the scheme wrote to a large number

of outstanding biologists; and presumably without exception they endorsed the scheme. We then wrote to a large number of biologists and said in effect: "If you were responsible for allocating X dollars in support of all phases of biological research in the U. S. (fellowships, grants in aid, large projects, Woods Hole, etc., etc., etc.), how large would X have to be before you would assign \$100,000 yearly to Biological Abstracts?" Practically every man set X at a figure higher than the sum the RF could possibly devote.

The objections raised above against written advice should not be taken too seriously. We do indeed find it necessary to write frequently for advice, and one of the most precious assets an officer can have is a group of wise scientists who can be trusted to write fully and frankly.

Precedents

The RF covers so much territory, functionally and geographically, that one ought never to get excited about one isolated project without thinking carefully about the precedent which may be established if this project is approved. How many other similarly good groups of persons are there which, because of modesty or remoteness or ignorance of the possibility, have not approached us? What social justification is there for approving the one in hand, and ignoring the others? If the others come flocking in, after this grant becomes known, what are you going to say to them?

Exceptions to Program

It is the present policy of the RF to have, for each division, fields of special interest. But the Trustees and the administration have always made it clear that a division should feel free to bring in items of exceptional interest, whether they conform to program or not. But how can one utilize this obviously desirable flexibility, and avoid setting embarrassing or improper precedents?

Furthermore, the staff of a division recognizes - and should meet - the obligation to keep itself widely and intimately informed concerning the personnel and opportunities within the areas of program interest. But no division can be so informed in all fields. Thus it would at first sight seem that officers could hardly be justified in recommending exceptional action for items outside program fields. For if these are in fields in which officers are not really widely and intimately informed, how can the officers be sure that this particular action is the exception which should be made? And how does one quiet his conscience when he thinks of the trusting individuals who read our published statements concerning program, and accordingly are too modest or shy to approach us on an item which clearly does not conform?

A solution of this difficulty which seems to work pretty well in practice is this: an exception to program should receive serious consideration only provided it is clear that the proposal in question is essentially without competition.

There are indeed proposals which are without competition. The giant cyclotron and the 200-inch telescope were projects which could be undertaken with the sure confidence that no valid competing claims could be made on us. Exceptions need

not be of these grand dimensions, moreover, to escape competition. Until recently, for example, it was clear that the Brown effort in applied mathematics was essentially without competition.

Institutional Development

Further light is shed on the problems of precedents and of exceptions to program by considering institutional development. It is obvious that institutional development on any general scale would send our total resources down the drain with hardly a momentary gurgle. On the basis, then, of what socially acceptable criteria of selection can the RF ever grant funds for institutional development?

We cannot do it on those bases which often (and quite understandably) appear cogent and conclusive to the enthusiastic backer of a certain university. The RF officer often needs a sense of humor. But a capacity to keep his face straight is more serviceable on those frequent occasions when the sincere and devoted president of old Siwash tells you that his institution is absolutely unique. It is unique, for one thing, because of its strategic location. (It is, in fact, precisely at the center of a hundred mile radius circle drawn around it.) It is unique, for another thing, because in its locality it upholds the free (or the democratically essential) tradition of the private (or the state-supported) university. It is unique in the quality and character of its faculty. And most of all it is unique for the marvelous atmosphere of cooperation and collaboration that exists within its faculties. This last point is usually stressed so heavily as to arouse the suspicions of anyone who carries scar tissue won in ancient academic battles.

No, the criteria cannot rest on any local claim of uniqueness. Is there ever a sound basis for RF institutional support?

NS has, over the last ten and more years, recommended very few grants which have any particular

flavor of institutional development.* These, moreover, were not really institutional development in the sense of being institution wide in the natural sciences. At Stanford and at the University of Chicago, large grants were made for general use in biological research. In these two instances the biological groups were of uniformly high quality, and the interests were so explicitly and enthusiastically along the lines of our program interests (that is, the full exploitation of quantitative techniques, including those of physics, chemistry, and mathematics, on problems basic to biology and medicine) that we felt justified in recommending general aid in these two cases; and felt prepared to meet the questions of other institutions.

It is, of course, conceivable to establish regional sub-divisions of our country or of other large areas; and then try to choose key institutions for demonstrational development along certain lines. This is approximately what MS has done in its psychiatry program. But it is important to note that MS did not attempt general institutional development. They attempted departmental development, and in a field of absolutely compelling interest, importance, and need.

Thus one ends up by realizing that the general development of any one institution is simply not our pigeon: and that development of departments or fields within institutions raises difficult problems which have been solved in certain cases of compelling need and importance; but which require broad and thorough study before any moves are made.

*Some of our South American grants (for example, to the Agricultural Faculty at Medellin, the Faculty of Sciences at Sao Paulo, and the Institute of Biological Investigations at Montevideo) are, in some respects at least, exceptions to this statement.

Financing of Buildings

Similarly there is a prejudice against financing buildings. Except in very unusual circumstances, we expect institutions to obtain their buildings elsewhere. The arguments are many and strong. A building is a visible monument which often attracts a personal giver. These personal givers have a natural and proper interest in certain institutions (their own, or the place that gave them an honorary degree, say), and therefore they can logically give to one institution and remain indifferent to the needs of others; while we have no justification for any such discriminatory interests. On the other hand, we obviously cannot give buildings to all universities. Buildings usually are used for mixed educational and research purposes; while our interests are heavily the latter. Buildings fall down and burn up; and still worse can be misused for purposes entirely foreign to our aims. We have more opportunities than we can possibly meet, in which we do not need to spend money for buildings, but need only to make an existing physical plant effective.

To which should be added that in the face of sufficiently compelling opportunities we do finance buildings.

Men and Ideas

If you turn over the paper that says "We don't like buildings very much," the other side says "What we are really interested in is men and ideas - men of character and ability and vision; and germinal ideas that will persist and pervade."

The interest in men, and in the training and development of such men as give promise of producing important ideas, has many ramifications. Most are so obvious they do not require mentioning. Others are less obvious. We would prefer to support any research project in a setting that assures that able, young, developing scientists will have contact with the project. During the war we postponed consideration of an NRC request for support to ecology, not because ecological research as such was not purchasable during the war (for the senior people were available), but because we would not have gained the more important by-product of drawing young men into the field. Similarly, we are bound to be less interested in supporting the research of a crabbed lone worker, however much of a genius, than we are in aiding such men as Stakman, Cannon, Hill, etc., who attract and inspire young men.

This same general point explains why we think it is necessary and proper to be interested in the personal qualifications (as contrasted with the intellectual qualifications) of fellowship candidates. I know of a man who is almost surely the best expert on the genetics of oak trees in the world; but he doesn't take baths, and he swears so much and so violently that most persons just won't work with him. As a result he is living a frustrated and defeated life; and he not only doesn't have any students - he doesn't even have a job.

This point, again, affects our attitude toward women. We certainly have no prejudice against women scientists. But an attractive and intelligent female candidate for a fellowship has a time expectancy of scientific activity which is perhaps half as long as the expectancy of equally attractive and intelligent young men. That is to say, a sizable fraction of the women will work a few years and then marry and stop. Therefore - and because we are essentially interested in training leaders for the future - a woman has to present a considerably stronger than average case to justify the extra risk.

Fellowships

A whole manual could be devoted to the subject of fellowships. The present comments will be held down to that minimum which should be familiar to any NS officer, whether or not he is directly concerned with fellowship appointments.

NS supports the National Research Council (NRC) fellowships in the biological and physical sciences. These are normally given to young Americans directly, or nearly directly, after obtaining the Ph.D. degree. The level of support was once much higher, but has recently been as low as \$60,000 annually. At the moment we are also supporting through the NRC a program of special postwar pre-doctoral fellowships, intended to help bridge the serious gap in scientific training caused by the war. This non-recurrent emergency program will probably cost something like \$600,000.

We also have a fellowship program which we administer ourselves. Appointments are given for "experience fellowships" to young or youngish scientists who, in the three to ten years subsequent to their doctorate have clearly established an outstanding capacity for original and independent investigative work, and who by virtue of their ability, character, and connections give promise of furnishing future leadership. We also, less frequently, appoint men to "training fellowships," these characteristically being used to add biological training to previous training in the physical sciences, or vice versa. The training fellowships often extend for two years, and sometimes for longer. They are intended to serve our program interest in experimental biology. So far they have been granted only to Americans.

In South America we hold as zealously as possible to the criteria of promise for leadership; but we have to shade somewhat and in some cases, the insistence for demonstrated genius in research. The South American appointments have, so far, all been training fellowships at \$135 monthly. In the U. S. the appointments (with exceptions, as always) relate to fields of special program interest. In Europe, and specially in the countries less strong scientifically, we were less insistent upon conformity to program; and in South America we are broadly trying to develop science, rather than our program within science.

Questions of race, color, religion, and politics are of themselves totally irrelevant. We do not care whether a candidate is hunchbacked or handsome. But we do care if any circumstance arising out of such otherwise irrelevant factors threatens to handicap or circumscribe the effectiveness of the candidate as a future leader in science. For, working all over the world, we cannot hope to deal with the mass problems of scientific training, even on higher levels. We must concern ourselves with excellence. Only by concentrating on the training of future leaders can we hope to make the most of our opportunity.

Certain suggestions have evolved out of our experience. We find that the probability of dealing with future leaders is increased if: we accept only persons who have a good post to which they can return, the fellowship being made possible by a leave of absence; candidates are always brought to our attention by older workers who want the younger man trained for some greater opportunity (i.e., candidates may not offer themselves); fellows present a carefully thought-out plan for their fellowship; fellows always agree to return to their post after the fellowship (so that nominators will not think any part of

our purpose is to lure personnel away for other laboratories); fellows always have in advance a reasonable speaking (and a good reading) knowledge of the language of the country to which they go; "experience" fellows spend at least one, but very seldom more than two semesters in one place (special training fellowships sometimes require a longer term in one place, and a longer term in total - but it is important to keep a fellowship from becoming a job).

Frequently other agencies, when discussing the quality of fellowship applications, say: "Among all our candidates there is a first group so undeniably and uniformly good that we could pick out of it only by some arbitrary procedure of selection. There is a final group so poor that we obviously should not be concerned with them. And then there is an intermediate group that is, so-to-speak, distributed along the curve that slides down from the high plateau of unquestioned excellence to the dismal valley of unquestionably poor quality. Where, in making our selections, should we draw the line in this intermediate group?"

We have always claimed that the mere asking of this question reveals an unfortunate philosophy concerning fellowship selection. For we would say: "Deal exclusively with the first group of unquestioned excellence. Draw the line before you ever get to the intermediate group. That is, the question 'May I have this fellowship?' ought to be like the questions 'Is this egg fresh?' or 'Do you love me?'." If you need to hesitate at all, the answer is surely no.

Endowment

In past times the Rockefeller Boards gave a lot of money as endowments, and no doubt with the thought that it was "permanent" endowment. The rather obvious dilemma arising from the fact that one cannot permanently forecast useful purpose was skillfully avoided by attaching to each such endowment gift several successively broader liberating clauses which become serially active.

But there are, of course, other and more serious difficulties connected with the concept of a permanent endowment. It is essentially impossible to forecast, for any long period, either interest rates or costs. Even more disruptive, however, are the irregularly occurring but apparently inevitable crashes which wipe out or at least decimate capital values.

This last point, parenthetically, seems an interesting one for study. The oldest U. S. public trusts listed in the World Almanac are the General Education Board and the Carnegie Institution of Washington, both founded in 1902. But I think I have read about some endowment that has lasted for two or three hundred years. And endowed charity actually had its origin during the early centuries of the Byzantine Empire. Were it not for the periodic leveling of values by catastrophic financial events, a single dollar invested at only 2% compound interest in say 500 A.D. would now amount to nearly three thousand billion dollars.

Thus, as anyone would admit when pressed, when he talks about permanent endowment he doesn't really mean - or at least shouldn't really mean -

permanent.* But that raises the point of what one does or should mean.

Suppose first that one ask: about how long into the future does it seem reasonable to try to project thinking about significant purposes and mechanisms for the use of RF funds? One would suppose that there were times - say, from 1900 to 1913 - when one would have risked saying "Oh, twenty-five or even fifty years." It is hard to see how one could now say anything more adventuresome than "Ten years in most instances, perhaps fifteen, or at the very most twenty, in unusual cases."

If, in those stable times when one could dare to try to project program twenty-five or fifty years, the interest rates (also presumably stable) were up around 6%, then this "program projection period" of twenty-five to fifty years is, in terms of the arithmetic of financing, practically the same thing as "forever." For at 6%, permanent endowment costs only 5% and 30% more, respectively, than does financing for fifty or twenty-five years: Indeed it costs only twice as much as financing for twelve years! Under such circumstances endowment quite naturally seems sensible. It costs negligibly more than for the program projection period.

On the other hand, consider present circumstances with a program projection period of say ten to fifteen to twenty years and an interest rate around 3%. Endowment now costs 3.9 times as much as ten-year financing, 2.8 times as much as fifteen years, and 2 1/4 times as much as twenty years. Thus quite apart from troublesome uncertainty as to future

*"Doomsday Note: Hoffritz's Fifth Avenue store is clearing out its stock of perpetual calendars at reduced rates." THE NEW YORKER, December 1, 1945.

interest rates, there is little incentive toward endowment when it costs two to four times as much as financing for the future period over which one dares to project program desirabilities.

The administration and the Trustees doubtless have other and perhaps better reasons; but the above considerations indicate at least some of the basis for the heavy prejudice which now exists in the RF against the idea of permanent endowments.

Outright Grants

Nevertheless we sometimes, even now, encounter situations which seem so thoroughly tested and matured and so reasonably certain to produce important results over a long period that we wish to recommend support for a good long time - really for "forever" as that impossible word applies to the situation in question. And because the project is so thoroughly tested, there is little reason why the Foundation should continue to maintain a close relation to the project. Indeed, from our own point of view, we may well wish to graduate this project off our books, freeing our time and attention for other, newer, things.

In such circumstances we sometimes make what is called an outright grant as contrasted with the more usual term grants. In the case of ordinary term grants, the RF promises to provide X thousand dollars a year for N years. It is the practice of the RF to write off the entire sum of NX dollars when the grant is voted; and these obligated funds are maintained either actually in cash or in some practically equally liquid form. Thus since these funds earn no, or practically no interest, the present cost to the RF of such a grant is essentially NX dollars. In the case, however, of an outright grant, a sum of money is voted and is paid over at once to the recipient institution, which is not required to furnish us with future reports, either financial or scientific (although we often receive them). The institution is at liberty to invest this fund and utilize it, principal and interest, in accordance with whatever future schedule turns out to be best.

A project would hardly be given an outright grant unless it is of some reasonable magnitude.

Thus outright grants are likely to be sizable sums (such as the recent \$350,000 outright grant to Harvard for E. J. Cohn's work), and therefore it is not unreasonable for the institution to invest these funds. Thus outright grants profit from the fact that universities can afford to take, relative to their own scientific projects, a somewhat less conservative policy than the RF can afford to take with respect to its future obligations.*

Thus the sum of \$100,000 will furnish \$10,000 annually for ten years if the money is voted as an ordinary term grant. But as an outright grant, this would furnish \$10,000 annually for slightly over 12, 13, or 14 years if the funds are invested at 3%, 4%, or 5% respectively. Similarly a 15-year term grant of \$150,000 would, if voted as an outright grant, last for almost 20, almost 23, or almost 28 years respectively.

Thus outright grants, when otherwise appropriate, have the advantage

1. of being strikingly economical as compared with term grants;
2. of preventing any mutual danger of long-continued paternalistic control;
3. of allowing the recipient full flexibility to work out his own future;
4. of severing our connection completely enough and long enough so that we end up really separated from the project, perfectly free to renew our interest or to sit tight.

*The point, of course, being that the University is risking its own money, whereas we would be risking money really not ours. With the financial policies of the RF, the officers, Gott sei dank, have no concern.

Grants in Aid

Once a year the Trustees vote to each division a sum of money from which, by so-called officers' action (involving approval by an officer of the division, an officer of the central administration, and a financial officer) can be allocated grants in aid in amounts not to exceed \$7,500 and for terms not to exceed three years.

At regular intervals someone is sure to ask (and it is a perfectly proper and important question): Why should the RF, which has almost unique power to do great things, bother with chicken feed? What justification is there for officers to take up valuable time investigating and studying small grants?

NS thinks that these questions have wholly convincing answers. Great things are very seldom - like an unbroken hen's egg - perfect in completeness, essentially indivisible, and wholly developed at first appearance. Great things are usually formed of small parts: great things usually grow from small things. If our thinking and investigation does not keep us in accurate and realistic contact with the actual operative details of science, we are not likely to be very wise about the larger plans.

We believe that grants in aid form an essential mechanism; but that, with rare exceptions, they should be used only because of their relationship to larger plans or larger hopes. Thus when someone asks us for a small grant which has no particular relation to our broader plans, then we decline this request, and refer the man to the various agencies which distribute small grants. We study and make small grants when they offer us a useful opportunity to supplement our larger projects, or to try out men or situations which may possibly later deserve larger support.

To which should perhaps be added that we have a prejudice against a grant of less than \$1,000 and almost a prohibition against a grant of less than \$500.

Credit

We are frequently asked by fellows and by recipients of grants what our policy is with respect to the insertion in published papers of a statement recognizing RF support. Our answer is: "If you feel that it is to your own advantage or interest to do so, we will not object to a brief and simple statement; but as far as we are concerned, we would somewhat prefer that such statements not be made." A similar answer is given if we are asked about the possibility or necessity of public announcement of grants. A younger worker, or a scientist in a smaller country, such as Latvia for example, often feels a very considerable pride in the fact that he has received help from the RF; and it is definitely and legitimately to his own advantage (and his institution's) to let this be known. Such cases it is hardly fair to discourage beyond the point of assuring that the notice be simple.

Answers to requests concerning notices in publications are minor instances of the broader policy of the RF as a whole, this policy being one of seeking no publicity and no credit.

One basic justification for this policy is the realization that while financial support is important in the sense that it is necessary, nevertheless we are actually junior, and hence suitably silent partners in most enterprises. That is, our contribution of money is, after all, not to be advertised in comparison with the scholar's contribution of his time and wisdom. In those cases in which we, too, have the chance to contribute a little time and wisdom, it continues to be sensible for us to keep still.

This policy, followed consistently for many years, has contributed greatly to the standing of confidence and respect which the RF enjoys. (It turns out, incidentally, to be the best possible way to get credit!)

Speed

Legitimate emergencies do sometimes arise: but in general be very leery of a situation which must be decided hastily. Why do we have to rush? Has someone used poor past judgment, or is he now using poor judgment? Is there something queer around, that will leak out in time? Surely these are disastrous reasons for hurry.

Indeed, the rate of making mistakes, in this business, appears to increase exponentially as the time for study decreases: and pressure to hurry should usually be resisted.

This organization is under no compulsion to show quick results. It doesn't want to be lethargic, or stodgy; but it doesn't like being hurried.

Fields Which Do Not Excite Us

There are certain fields of research in NS which, while unquestionably valuable and desirable, have generally not interested the RF. Perhaps geology is a good illustrative example. We have done little here, and mainly I think for the reason that this field has close relation with very large and rich industries - mining and oil - from which geology can reasonably expect support. This reasoning has a dangerous loophole - namely, we would be foolish to sit by and permit such a field to become too concerned with commercial applications and too little free to do basic research in pure science.

We have been similarly little concerned with research in engineering, both because it has its own natural sources of support elsewhere, and because most of it is not research anyway.

The reverse of this coin is that we ought to be specially sympathetic to the needs of relatively small groups of scholars who have no rich uncles in business - astronomers and mathematicians, for example.

Support of Hazardous Undertakings

The Rockefeller Foundation has been exceedingly edgy about the support of any research program which involves specially hazardous travel and living. The reason is that, just precisely because we are the "Rockefeller" foundation, no legal precision or finality with which responsibility might be foresworn or denied would ever, as a practical fact, remove public and private pressure upon us, should a tragic accident occur.

To get the full flavor of the possibilities here, picture a widow with children to be educated; and listen in on part of the emotional plea - "With all your millions, you can hardly refuse to help us, when, after all, it was you who sent him off on this dangerous mission." Figure out an answer to that one, before recommending such a grant.

Payment of Major Salaries Under Grants

There is a large prejudice against paying major salaries under our grants. For one thing, we have too many alternative opportunities where we do not have to pay major salaries, and where our funds can be used at high efficiency by furnishing only the last thirty, or twenty, or even ten per cent of support needed in order that an otherwise static situation move forward. For another thing, the payment of major salaries under our grants almost certainly snowplows up a heap of future responsibility which, sometime, we will have to burrow through or blast away.

"Rockefeller Foundation Assistants"

Sometimes the recipient of a grant will himself formally nominate junior research personnel employed under the grant as "Rockefeller Foundation Assistants," or even as "Rockefeller Foundation Fellows." Discourage any such practice. It is inconsistent with our desire to be the silent partner, and it appears to put our stamp of approval on personnel we may never have seen or even heard of. Furthermore, it may give the persons so nominated a quite false impression that we may be specially interested in them.

Financing Books or Publications

We are frequently offered the opportunity to support an individual for a period while he writes a book. It will only take six months or a year to write it; and it is terribly important. The difficulty with this request is not the almost certain mis-estimate in time required. The difficulty is that practically every human being who can read or write at all apparently wants to write a book. Even the officers do. We therefore normally explain that we are just not in this business.

Nevertheless it should be added that NS has made a grant which was essentially for the writing of a book. We have done this only once in the last dozen years, and there were enough special circumstances to furnish protection from the other askers. Just to emphasize, moreover, that many of these remarks are not to be interpreted inflexibly, and that circumstances can vary greatly from field to field as well as from time to time, the reader ought to examine "A Review of Studies in American History and Culture...", a memorandum issued by the Humanities division on October 15, 1945; and see how magnificently that division has exploited the technique which NS has, so far, shied away from.

We are also asked to help support research journals. The RF history here is long and not without its painful moments. We once made a grant to the NRC, to be administered by a committee and to help out scholarly journals which were very far behind in publishing good research. The committee worked hard and well, and when the money was gone, the situation was at least formally worse. We had apparently stimulated more research than we had published. Also NS has put considerable support into various "absolutely essential" bibliographic aids, only to have them embarrass

us in one of two ways - sicken and die, or prosper and swamp us.

For a time we agreed to put money into publication only provided we were convinced that it was remedial financing; money that would help permanently solve the problem of financing, rather than money to pay regular bills. In the case of U. S. physics and mathematics, this procedure has apparently worked. In one large and important case - Biological Abstracts - we helped solve the problem by kicking the child out of our warm bright living room, into the dark snowy night outside. The child braced up, threw away its fancy clothes, got a good suit of jeans and a job, and proceeded to earn an honest living.

We have for long sponsored the principle that the costs of publication should be considered a legitimate and important part of the costs of research. So when we support any research program, we are willing to have included in the budget the cost of suitable publication. In many cases, of course, existing free facilities are satisfactory. In some cases, we take the initiative of asking concerning the desirability of a publication item in the budget, even though the applicant has not thought of this. Similarly we pay publication costs, if required, for fellows.

A particularly dangerous, and not infrequent sort of request is to help start a new journal. Remember that a new journal is desired by almost every scientist whose interests have become very narrow and special, and many scientists whose papers are too curious or too poor to compete in existing journals. Once in a while the opposite of specialization operates - a man wants a journal which will be about everything in general. Also remember that any journal takes from two to ten times as much money as its

starry-eyed promoter thinks it will need; and that hopes that it will become self-supporting are usually as unsubstantial as a ghost's shadow. (News item: NS helped start Mathematical Reviews, and is very proud that it did.)

Mistakes

Many institutions are almost compelled by circumstances to minimize, if not indeed to cover up, their mistakes. A State university president is not very likely to include in his report to the state officials, a section which begins "It must be agreed that the money spent over the last ten years in an attempt to build up a Department of Polish has been wasted." And yet educational institutions (and foundations) do make mistakes, and ought to profit by them.

Indeed it can be persuasively argued that the RF ought to make mistakes. If it does not, it has almost surely not been as imaginative and as adventuresome as it should have been in ferreting out hard and important problems and in attempting their solution. Although we have certainly made some mistakes which we never should have made, it seems probable that we have, on the whole, made too few mistakes - or at least, too few good mistakes. A "good" mistake, I take it, is one which is recognized and profited by; and which represents a bad outcome of a situation which (though somewhat risky) contained really important promise. The moral is that an officer should be alert, imaginative, and flexible; and should not be too afraid - too desperately and paralyzingly afraid - of making a mistake.* And when one is made, we should do a good thorough autopsy, and find out what the patient died of.

This last necessity has been recognized, in our office procedure, by a system of writing

*J. P. Morgan once said "There is nothing so timid as a million dollars."

assessments of projects. Several years ago we spent considerable time on this, and it is assumed that we will be put back at it, one of these days.

Thanks for the Candy

It seems almost too childish to mention, but it is not very realistic to ask a recipient of a grant whether it has proved profitable to him, and then solemnly record that "Professor X says that this assistance has been of inestimable benefit." What, in the name of Emily Post, did you expect him to say?

This really wouldn't be mentioned were it not for the fact that the NRC, trying to assess the value of their fellowship program (financed by the RF), wrote to every fellow and asked him whether he thought he profited by the fellowship. I think one man wrote back "no," and I have always wanted to meet him.

GENERAL

Recommending Individuals for Jobs

Officers are frequently asked to recommend men for positions. It is a useful and important function to suggest, in informal conversations, men who might well be considered for posts. But formal recommendations for almost any sort of a position raise delicate questions: for we must never give an institution any basis for coming to us later, and saying or hinting: "Well, the RF was clearly pretty anxious for Professor X to come to us - and now what are your plans for him, and incidentally where is the necessary support."

Personal Activities of Officers

An officer of the RF is a little like a university president, or a minister, in that he sacrifices a considerable part of his personal life to his job. Apparently there was an earlier tradition in the RF that officers should have essentially no private professional activities. The present administration does not take so extreme a view. It was recently approved, for example, that WW be associated with a series of science talks over the radio, and that he write a letter to the NEW YORK TIMES which, while signed simply "Warren Weaver" stated at the top WW's association with the RF. This letter, moreover, was certainly on a controversial subject - otherwise there would have been little point in writing it.

On the other hand, WW declined a request to be one of an international committee sponsoring interchange of French and American scholars; and an invitation to be one of the official advisers of Brown University, School of Advanced Mechanics. The reasons here were that these activities might very possibly be referred to the RF for interest and support; and an officer clearly cannot be on both sides of the fence.

It is clear that an RF officer ought not to engage in any outside activity

1. which might involve any impairment of his objective and judicial position with respect to any present or future request to the RF;
2. which would in any way interfere with the time and energy owed to the officer's primary job with the RF;
3. which would in any way capitalize on his connection with the RF;

4. which is undertaken because of financial gain.

These conditions are rather obviously necessary, but they are not sufficient. For an activity might meet these conditions and still be of such a sort that anyone - say, a Trustee - might very well say, if he heard of the activity, "Well! That seems to me a very queer thing for an RF officer to do." It may be that, if all the details were explained, the Trustee would approve. But one cannot reasonably hope for a chance to explain all details. And thus it seems wise to add, as a last condition, that

5. an RF officer should avoid any outside activity, however innocent and proper it actually may be, provided it is of such a nature as to look queer unless all the background details are explained.

Unity of the RF

The RF has five divisions, each with its own officer staff, each with its own budget, each with its own program. But a major responsibility of every officer of the RF is to see to it that, divisions or not, the RF be not divided.

We have one central unifying purpose to serve mankind. We are fractionated by no commitments to the traditional loyalties of classical disciplines. We have the clear duty of joining our forces, of mustering the greatest integrated strength.

This may sound like mere words - ringing words, perhaps - but still only words. But the matter should not stop with words. Every single officer should do his steady utmost to interest himself in the work of the other divisions. He should lunch frequently with men of other divisions, and ask them to talk about their activities. He should read the Activities List carefully, and drop around to other offices to ask questions. He should be sensitively interested in projects which straddle divisional fields, or lie between them. He should plan part of his own serious reading in the areas of interest of other divisions. He should be generously unconcerned what particular division formally sponsors a project, so long as it is a fine project. He should, in short, take no lesser goal for his interest than the effectiveness of the RF as a whole.

Warren Weaver

January 11, 1946