fertilized soils more effectively than would potatoes, cotton, or tobacco. Tobacco uses fertilizer phosphorus in the seedling stage more than cotton. Both appear less efficient than corn in using soil phosphorus.

Influence of phosphorus fertility of soils on the utilization of fertilizer phosphorus. In an experiment with cotton, 50 and 100 pounds of phosphoric acid were applied as superphosphate on two soils. One soil contained 67, the other 288 pounds of available phosphoric acid per acre. The data are given in Fig. 9. The striking thing about the figure is that the really big difference in the phosphorus content of the crop is due to the difference in the two soils. The phosphorus fertility level of the soil did not materially influence the utilization of fertilizer phosphorus. Similar results have been obtained with both corn and potatoes. The potato experiments were on Long Island and in North Carolina. At both locations three rates of phosphorus fertilization were compared on two soils of widely different phosphorus fertility. Here again, as with cotton and corn, the phosphorus content of the soil did not materially influence the utilization of fertilizer phosphorus when applied in bands. The soil fertility level, however, did greatly influence the amount of soil phosphorus used, and the total phosphorus absorbed by the crop.

Such data give convincing evidence of the importance of increasing the phosphorus fertility status of soils to a reasonably good level. They also indicate that the various crops studied used to good advantage residual phosphorus from previous fertilization.

In conclusion, we feel that radioactive phosphorus is a very useful tool for certain studies. It has its limitations, however; one is that the rate of decay is such that it can be followed only one season. The residual effects of phosphorus fertilizers, therefore, have to be determined by less direct methods. We are also conducting, as supplementary to this field approach and closely integrated with it, fundamental investigations on plant nutrition, soil chemistry, and soil-fertilizer reactions, both rapid and long term. Our knowledge of soil and fertilizer phosphorus is steadily increasing. It appears that, for the most part, we are gradually increasing the phosphorus fertility status of our soils. If the present high level of fertilizer phosphate use is maintained, and somewhat better distribution is achieved to certain sections of the country, phosphorus will gradually become less of a limiting factor in crop production.

Reference

1. FRIED, MAURICE and MACKENZIE, ARNOLD J. *Proc. soil sci. Soc. Amer.*, to be published.

Based on a paper presented at a meeting of the Virginia Section of the American Chemical Society, at Petersburg, Virginia, October 20, 1949.

The First Year of the SCLP

The Scientists' Committee on Loyalty Problems,[1]

Princeton, New Jersey

IN THE FALL OF 1948 a committee of the Federation of American Scientists was formed to deal with the security and loyalty problems confronting scientists. This report summarizes the activities of that committee, the SCLP, in its first year.

In order to make the committee's operation more effective, members have been chosen from a fairly small geographical area. The committee has a panel of 80 sponsors and consultants, however, who are broadly representative, geographically and professionally.

Because other groups were studying the long range legal (*1*) and sociological (*3*) implications of the security program, the SCLP has concentrated its attention on the immediate and practical problems facing scientists. The first action of the committee was to collect and study the available information on clearance procedures (*13*). It then undertook to obtain for individuals, without judging the merits of any case, the full protection of existing regulations. And on the basis of this knowledge and experience, it has urged upon government agencies the adoption of specific reforms and procedures.

One point deserves particular emphasis at the outset. Although the SCLP has worked consistently for more equitable and judicial clearance procedures, it does not believe that a poor security risk should be given clearance. The steps it has taken and the measures it has recommended are all designed to ensure

[1] Present members of the committee are: Lyman Spitzer, Jr., chairman; William A. Higinbotham, associate chairman; Arthur S. Wightman, secretary; Donald R. Hamilton, treasurer; Kenneth W. Ford, Samuel A. Goudsmit, Herbert R. Muether, T. Alexander Pond, and Irving Wolff.

a fair hearing of all the available evidence; they are *not* designed to increase the number of clearances given in cases that are actually doubtful.

Aid to Individuals

Because it never occurs to them to doubt their own acceptability, most scientists are poorly informed on clearance procedures. The local clearance board may do little to relieve the resulting confusion, since the security procedures within an agency are likely to be variable, and subject to different interpretations because of the lack of precedents. Hence, the first need of a scientist with clearance difficulties is often for procedural information. To serve this need, the SCLP keeps an up-to-date summary of loyalty and security clearance procedures of the various government agencies (*13*) available on request. These procedures vary widely from agency to agency.

If clearance has been initially refused a scientist, and if he is allowed an appeal, the SCLP has in some cases been able to secure legal advice for him. Finally, in cases where a decision has been left pending overly long, the committee may attempt informally to speed the decision.

Current appeal procedures are far from perfect, as will be pointed out later in some detail. Even so, an appeal of any sort offers at least some opportunity to prevent the perpetuation, in an uncontroverted form, of the flimsy and hearsay evidence which secret dossiers sometimes contain. There is a large group of individuals for whom no appeal is possible. This group is composed of prospective employees, i.e., scientists to whom a job in a classified project has been offered pending clearance. It is presently possible for such a man to be barred indefinitely from many types of government work on charges of which he is ignorant, and on evidence which he is not allowed to dispute.

When an appeal is possible, the scientist denied clearance may actively seek a reversal of the decision in order to keep his job or to clear his name for future jobs. Or he may feel that the expense and trouble of appeal are not worth the effort, and seek employment where clearance is not required. This point of view could represent a threat to the health of government-sponsored research. Our case histories indicate that a number of scientists in fact feel this way.

The committee has considered 62 individual cases in its first year. About one third of these were prospective employees, mostly with the Atomic Energy Commission. The rest were employees divided among the various military departments and their contractors, and the AEC and its contractors, with a few in other departments, such as the Department of Commerce and the Veterans' Administration. Twenty-seven of these cases are now closed, either by a final decision of a review board, or because no appeal was possible, or because the scientists concerned preferred to drop the whole matter and seek jobs elsewhere. (Not all of the 20 prospective employees fall in this group. Some still seek action, despite the present official hopelessness of their situation.) The other half of the cases studied are still open, and some have been pending for over a year.

The committee has gained information from these cases which has been very helpful in formulating advice for others in clearance difficulties. Two general rules have emerged for the scientist facing a clearance hearing or appeal: (1) get a lawyer, and (2) attend the hearing personally. Unfortunately, these rules are not always financially practical.

A specific case may best serve to illustrate the problems met by scientists and the way in which the SCLP has endeavored to help:

The case of Mr. K. Mr. K. worked in Washington as a scientific aide for the Navy during two war years. After two subsequent years in the Navy as a radar operator, he returned to a Navy job in Washington, then took a leave of absence to finish his undergraduate college training in science. A few weeks before graduation in January 1948, he was accepted for technical employment on an AEC contract at L. University. This acceptance was contingent upon clearance by the AEC, which was expected to take "at least a month." The employment was to begin as soon as clearance came through.

In February 1948, Mr. K. was informed that his fingerprints had been lost and that a new set was needed. He had a set made and forwarded them to L. University. In March he wrote to find out if any action had been taken. Mr. M. at L. University replied that word was expected "momentarily." In June Mr. K. wrote again, and was told by Mr. M. that word was expected "in a short time."

On July 1, Mr. M. wrote:

> The Federal Bureau of Investigation has made a thorough study of your case and the file has finally reached the security officer of the Atomic Energy Commission in the New York Office. Because of some information presented in the FBI report, the New York Office is unable to grant clearance. However, they do not want to take the responsibility of refusing clearance, and at our request they will send your papers to a Board of Review in Washington for final decision. At best it will be another three months before the Board reaches your case and comes to a final decision.
>
> I offered you a position on our project with the provision that you first receive clearance from the AEC. Until clearance is actually refused, I feel obliged to hold a position open for you. However, the security officer in New York has informed me that the chances of a favorable decision from the Board of Review are slim.

You have waited five months now for clearance and will have to wait about three months more with no assurance that you will have a job even then. If you wish, I will request New York to send your papers on to Washington. However, you may prefer to drop the matter at this stage and accept a position elsewhere. If, in spite of the slim possibility of a favorable outcome, you wish to press for a final decision, please let me know and I will see that the necessary steps are taken.

Mr. K. answered promptly:

My conscience is clear. I most certainly do wish to press for a final decision. Please request New York to send my papers to the Board of Review.

On November 9, nearly 10 months after the first request for clearance, Mr. M. wrote:

I regret to inform you that the Atomic Energy Commission has refused to grant clearance in your case, and the offer that I made to you some time ago must be withdrawn. No reasons were given for the refusal of clearance, and since the opinion was handed down by the review board in Washington, I am afraid there is nothing further we can do.

Mr. K. in the meantime had accepted a fellowship at N. University and was working on his M.A. He was anxious, however, to press for clearance, since he might someday wish to work on an AEC contract. Acting on SCLP advice, Mr. K. wrote to the New York office of the AEC to request a statement of charges and an opportunity to defend himself. Mr. O. of the AEC replied on August 26, 1949:

In reply to your letter of August 11, 1949, . . . I should like to say at the outset that the AEC did not refuse to grant you clearance for that position. Your case was never pursued to the point where a final decision was reached by the AEC one way or the other concerning your eligibility for security clearance. . . .

The letters of Mr. M. and Mr. O. were thus directly contradictory. After two years of waiting, Mr. K. still hopes to be cleared for work on AEC contracts.

The case of Mr. K. is not typical. No two cases are alike. But common to most cases that have come to the committee's attention are red tape, confusion, and delay. Personnel offices have been known to tell applicants that clearance was refused when in fact no clearance was involved, whereas other applicants have been turned down for clearance reasons without being told that their clearance had given trouble.

The Issues

The security problem is the direct result of the continuing international tension, and the national security must, of course, be the overriding consideration in any discussion of this or related problems. Given this premise, there are still two difficult questions to consider:

(1) To what extent must secrecy be carried in scientific matters best to protect the national security?

(2) How shall decisions on the potential disloyalty and reliability of a particular scientist be made?

At the beginning of its work, different members of the committee had widely different answers to these two questions. The experience gathered during the year has produced fairly uniform agreement on certain general answers.

Boundaries of secrecy. Selection of those items (facts, equipment, research projects) which must be kept secret to ensure the national security is the touchstone in the formulation of a security program. Once the boundaries of necessary secrecy are defined and removed from the discussion, the issues become clear. The remaining problem is one of personnel only. The SCLP believes that the boundary should be located by balancing the requirements of security by secrecy against those of security by achievement, that is, by evaluating the point where restriction of information so hampers research that national security is more harmed than helped. For example, vital secrets in atomic energy can be adequately protected for the time being by classifying the technology and status of bomb construction. However, extension of secrecy into the field of nuclear physics would be unwise in the long run. Any security gained by general secrecy of our *fundamental* data would be rapidly overweighed by the diminished vigor of our own research. These remarks will be accepted as truisms by most members of the scientific community; but the point is worth making in view of the widespread tendency among the laity to regard "science" and "secrets" as synonymous. The committee expressed its opposition to the unwarranted spread of secrecy in a letter to Senator Brien McMahon, chairman of the Joint Committee on Atomic Energy, on February 28, 1949.

Clearly, no committee composed only of scientists (or, even more clearly, only of military men, or only of government executives) is qualified to determine accurately which phases of research are vital to defense. For this reason, the SCLP has accepted the boundary as it found it, and has confined itself to the remaining problems: first, the scope, and second, the mechanics of the personnel security programs.

Scope of the Personnel Security Program. Given a boundary between secret and nonsecret research, the question arises, how shall the investigation of personnel be related to this boundary? It is clear that such investigations must include, as a minimum, all scientists at work in the secret fields. However, the committee feels that any extension of personnel se-

curity measures beyond the minimum and into the fields of general science threatens the national security rather than strengthens it. Three principal reasons are:

1. Investigation of personnel on attitudes and associations represents a break with the traditions of democracy, and should be tolerated only when clearly essential to the national security.

2. The clearance requirements, especially as they have been applied in the past, deter some capable and much-needed scientists from going into important scientific work.

3. There is some danger that personnel investigations in nonsecret fields may be followed by extension of secrecy into those fields.

The AEC fellowship controversy in the spring and summer of 1949 provided an arena for the airing of views on the scope of the security program, and an ideal one in the sense that no question of national security was directly involved. The controversy was set off by the discovery of an AEC fellow who was a professed communist. It culminated in the passage of the O'Mahoney amendent to the Independent Agencies Appropriation Bill (H.R. 4177) in August 1949, requiring full FBI investigation and AEC clearance of all AEC fellows. It was clearly a question of extension of investigations into nonsecret areas, since the fellowship in no way implied security clearance or any commitment to work for the AEC. In a letter to Senator McMahon dated May 23, 1949 the committee took a strong stand against this extension, using the arguments just stated, and in addition pointing out that recent history has shown clearly the damage that can be done to scientific research by the requirement of political orthodoxy. The committee further urged scientists to make known their views to the senators and congressmen.

On October 26, 1949, the Council of the National Academy of Sciences, whose National Research Council administers the AEC fellowship fund, stated its position on the program as amended:

> In our opinion the requirement of FBI investigation and Atomic Energy Commission clearance is ill-advised for those fellows who neither work on secret material, nor are directly preparing for work on Atomic Energy Commission projects. We are convinced that by this restriction the value of the broad program has been greatly reduced; we have grave doubts whether the continuance of the Atomic Energy Commission Fellowship Program thus restricted is in the national interests.

Although it was clearly the intent of Congress to extend investigations to cover all prospective AEC fellows, regardless of their fields of research, the previous security boundaries were restored by the announcement of the AEC, dated December 16, 1949 (*9*), of the withdrawal of its fellowship program, except for postdoctoral grants for secret work. This step was taken after consultation with the National Academy of Sciences.

Since this article was prepared, arrangements have been made by the AEC to resume its predoctoral fellowship program, but with the restriction that "the subjects of research must be sufficiently closely related to atomic energy to justify a presumption that the candidate, upon completion of his studies, will be especially suited for employment by the Atomic Energy Commission or one of its contractors." The program will be administered not by the National Research Council but by four different agencies: Associated Universities, Inc. (which operates the Brookhaven Laboratory) for the northeastern region; Oak Ridge Institute for Nuclear Studies for the southeastern region; and by fellowship boards under contract with universities for the midwestern and western regions.

In a letter to the SCLP, Senator McMahon noted that a National Science Foundation might be established, and that this organization might administer fellowships for nonsecret research. If clearance requirements could be kept out of all nonsecret work sponsored by the NSF, this organization could be the answer to the fellowship controversy. In addition, the support of basic research by an agency outside the National Defense Establishment might help prevent further inroads of personnel security into nonclassified research. However, if legislation setting up the NSF requires full FBI investigation and clearance for many workers in nonsecret areas, a large number of scientists will oppose the adoption of such a bill.

Mechanics of the Personnel Security Program. The second major problem of personnel security is the practical one. How shall a loyal person or a "good security risk" be determined? How can the potentially dangerous person be discovered and removed without harming the innocent? What procedures can provide a maximum of security with a minimum of injustice?

Whatever else they may be called, security hearings are trials in which probability of innocence or guilt is determined; and denial of clearance can do more lasting harm than the mere loss of a job. Yet there is an important difference between security hearings and criminal trials, a difference of emphasis. Both should attempt to convict the guilty and protect the innocent. But the underlying philosophy of the criminal court is: Better to let a guilty man go free than to convict an innocent man. The philosophy of the security program would appear to be rather: Better to deny clearance to a reliable man than to

clear a disloyal man. Even within this assumption, much can be done to reduce the possibility of an incorrect decision. The SCLP believes that all of its suggested reforms increase the probability of a reliable man's securing clearance without in any way decreasing the probability of clearance's being denied to a poor security risk.

Suggested Reforms

The committee's proposals for procedural reform in the security program are the following:

1. A hearing should be held by an independent civilian board before the individual is dismissed.

2. An appeal hearing should be held before a different but similarly constituted board.

3. Hearings, as such, should be unclassified.

4. A detailed statement of the charges against the individual should be made, so that he has an adequate opportunity to prepare his defense.

5. Permission should be given for confrontation and cross-examination of witnesses, except when concealment of identity of informant is necessary to the carrying out of further investigation.

6. In all cases, an unclassified transcript of the hearing should be supplied to the individual.

7. Written judgment should be presented to the individual with all possible speed.

No agency lacks all of these procedural safeguards, and no agency incorporates them completely. On November 14, 1949, the committee recommended to the heads of the military agencies the reforms that were respectively applicable as of that date. These recommendations, with the replies received by the committee, give a picture of the current state of security procedures.

Department of the Army. The Department of the Army lacks safeguards numbers 1, 2, 5, and 6. In a letter to the SCLP dated November 21, 1949, the Office of the Secretary of the Army stated that no immediate changes in security regulations were contemplated.

Department of the Navy. In a letter dated January 6, 1950, the Secretary of the Navy advised the SCLP of the policy of his department in regard to recommendations 1, 2, 4, 5, and 6.

1 and 2) The department is not required by law to grant a hearing. However, it has provided that an employee discharged on security grounds will be granted a hearing before the Navy Department Loyalty Appeal Board in Washington, D. C.

4) After an employee has been removed, he is given, on request, a statement of charges.

5) Permission to confront and cross-examine witnesses is denied in general in order to safeguard sources of information.

6) A transcript of the hearing before the Loyalty Appeal Board is given the former employee.

Department of the Air Force. The Air Force regulations lack safeguard 5. However, in a letter to SCLP dated December 8, 1949, the Office of the Director of Civilian Personnel, USAF, stated that cross-examination of individuals who give derogatory information and who appear as government witnesses is permitted, and that it is the usual practice to call all such individuals willing to testify. The letter points out, however, that such individuals cannot be forced to appear, and that an informant's desire for anonymity is respected.

Department of Defense. The SCLP has, in addition, urged the Secretary of Defense to unify the procedures of all departments under his jurisdiction. A letter from Secretary Forrestal in February 1949, stated that the whole security program was under review at that time in the Department of Defense. In May and November, 1949, Secretary Johnson promised continued attention to the clearance procedures in his department.

The Industrial Employment Review Board (IERB). The IERB, an appeal board administered by the Munitions Board for contractors of the Army, Navy, and Air Force, lacked most of SCLP's recommended safeguards until recently. In a letter dated December 5, 1949, the chief of the Munitions Board's Office of Manpower advised the committee of a reorganization of the IERB, in which safeguards 4, 6, and 7 have been included. Policy on the remaining suggestions is as follows:

1. The boards will be mixed civilian and military personnel, with a civilian chairman.

3. The hearings cannot be unclassified or opened to the public; however, participation of the appellant's attorney, union representative, and any witnesses is allowed.

5. As with the Air Force, cross-examination of only those witnesses that the government chooses to call is allowed.

The committee does not understand, in respect to IERB policy on recommendation 3, why it is necessary, or indeed how it is possible, to introduce classified information into a hearing involving an individual who has not been cleared. If *no* classified information is introduced, then there is no reason to classify the hearing. The IERB is the only agency that finds classification necessary. However, the rights of appellants are greatly enhanced by the changes that have been made.

The AEC. The AEC lacks safeguard 5, but has on occasion allowed confrontation.

Proposal 5, recommending permission for the cross-examination of adverse witnesses, is not included in

full rigor in the procedures of any security board. Committee files indicate that weak or irrelevant evidence is used in some hearings and in some charges. The SCLP has pointed out (*10, 11, 12*) that scientists themselves may help to improve this situation by signing all evidence given to FBI investigators and offering to appear in person to testify.

Criteria for Clearance

Determination of the actual criteria to be applied in determining eligibility for security clearance is apparently extremely difficult. Very recently the AEC (*4*), the Air Force (*5*), and the IERB (*6*) have formulated such criteria. The formulation was so difficult that at one point the AEC despaired of ever spelling it out in specific terms (*8*). However the committee believes that similar codifications should be made by all agencies concerned.

The AEC and Air Force recognize two types of security risk. For example (*3*):

"Category (A) includes those classes of derogatory information which establish a presumption of security risk . . .," that is, disloyalty (in the sense of the President's loyalty clearance order (*7*), felonious conduct, insanity, violation or disregard of security regulations, etc. In these cases, refusal of clearance is mandatory (subject to appeal in Washington).

"Category (B) includes those classes of derogatory information where the extent of activities, the attitudes or convictions of the individual must be weighed . . . or [those of] his spouse. . . ." In these cases, clearance can be granted or denied, or referred to Washington. Much has been written elsewhere on these types of guilt (*1, 2, 3*). The committee, however, has confined itself to opposing any unwarranted increase in the area where these criteria must be applied.

The Problem of Prospective Employees

In urging procedural reforms, the SCLP has consistently asked that they be extended to prospective as well as actual employees. The complete lack of procedural safeguards for most prospective employees is probably the outstanding defect of the security program for scientists today. Excepting only the Civil Service Commission (loyalty program) and the Air Force, the agencies principally affecting scientists do not allow a prospective employee either a hearing or an appeal. These agencies are the Navy, the Army, the IERB, and the AEC.

This undesirable situation will become increasingly important as the proportion of prospective employees dealt with in security cases steadily grows. Enlightened national self-interest demands that withdrawal of a job offer on security grounds be handled with whatever degree of care is accorded to the process of firing on security grounds. When a prospective employee is denied clearance, this fact appears on his FBI record. As a result, it then becomes administratively difficult for anyone else to employ him on government or other classified work at any time. This FBI record may even imperil his chance of obtaining a good position of any sort, in or out of government, classified or unclassified. It is clearly unfair to risk blackening a man's record and threatening his entire subsequent career without establishing some procedural safeguards.

The SCLP has pointed out the serious inequality in the treatment of prospective and actual employees to the Army, the Navy, the Air Force, the AEC, and the Joint Committee on Atomic Energy. Only the Air Force has changed its policy to remedy this inequality. In a letter to SCLP in December 1949, the Air Force revealed that its prospective and actual employees were now granted the same treatment in security cases. Some evidence of a possible change in policy towards prospective employees has come from the AEC. The commission stated over a year ago in its fourth semiannual report (July 1948) that applicant hearings were "currently under consideration." In a subsequent interview (*8*), however, the commission was unenthusiastic about such hearings. The principal arguments against them at that time were the additional trouble and expense they would make for the AEC, which already found security investigations a considerable burden.

So long as the present situation continues, the least that can be done is suitably to warn prospective employees against overoptimism. Plain honesty demands that an applicant to whom a job offer is made be informed that hitches sometimes arise in clearance, that personal plans made on the assumption of future clearance may go awry, and that there is no way in which a decision may be appealed or a black mark erased.

Conclusions

The experience of the SCLP during its first year of operation, which has been outlined in the present report, has led to the following conclusions:

1. *Further reforms in procedure are desirable.* Although relatively few scientists encounter clearance difficulties, and clearance procedures have been substantially improved during the past year, there is further room for improvement. In particular, procedural safeguards for prospective employees are needed. Also, a more rapid processing of individual cases is desirable to eliminate long delays.

(*Continued on page 238.*)

reported to the congress that did not have the *unanimous* support of both the commission and the Section on Nomenclature.

Proof of the minutes of the session (approximately 650 printed pages), unavoidably delayed, is now in the hands of each commissioner, and after a short period allowed for approval will be at once published in the *Bulletin of Zoological Nomenclature*. The secretary suggested the Washington group await appearance of the minutes before they published anything. It is regrettable that they have not seen fit to do so.

J. CHESTER BRADLEY
New York State College of Agriculture at Cornell University, Ithaca, New York

A letter was also received from Pierre Bonnet, professor in the Zoology Laboratory, Faculty of Sciences, Toulouse, France, who expressed his astonishment at the views of the Washington Discussion Group and supported the decisions of the congress for reasons already stated in the other letters published here.

(*Continued from page 225.*)

2. *Clearance procedures should be confined to sensitive areas.* Attempts to extend security measures into nonsecret areas reflect the fear that dominates the attitude of large sections of the public and the press. The SCLP is convinced that such an extension of the security program would not benefit the national security and in fact would be harmful to the nation's best interests. In particular, it is hoped that no clearance will be required for nonsecret work under the proposed National Science Foundation.

3. *Scientists should take an active interest in the security program.* Much of the improvement in procedures evident since the war has presumably resulted from the strong recommendations made by scientists and others concerned. Individuals in universities and in industry can promote further improvements by familiarizing themselves with the clearance situation in their environment and by urging specific reforms.

References

1. EMERSON, T. I. and HELFELD, D. M. *Yale Law J.*, 1948, **58**, 1; see also subsequent papers by W. J. Donovan and J. Edgar Hoover in *Yale Law J.*
2. O'BRIAN, J. L. *Bull. Atom. Sci.*, 1948, **4**, 166.
3. AAAS SPECIAL COMMITTEE ON CIVIL LIBERTIES FOR SCIENTISTS. *Science*, 1949, **110**, 177.
4. *AEC information for the press No. 151*, January 5, 1949.
5. *Air Force Regulation No. 40-12*, September 15, 1948.
6. *Criteria governing actions by IERB*, November 7, 1949.
7. Executive Order 9835, *Federal Register*, 1947, 1935.
8. Interview, October 25, 1948, between representatives of Fed. Amer. Sci. (Higinbotham, W. and Spinrad, B.) and of AEC (Bacher, R. *et al.*).
9. NATIONAL ACADEMY OF SCIENCES. *Science*, 1949, **110**, 651.
10. SCIENTISTS' COMMITTEE ON LOYALTY PROBLEMS. *Science*, 1949, **110**, 124.
11. ——— *Phys. Today*, 1949, **2**, 3.
12. ——— *Bull. Atom. Sci.*, 1949, **5**, 299.
13. ——— *Science*, 1949, **109**, 621.