study the basis of life itself. Witness the frequent investigation of living cells and even the elements, such as chromosomes, of which these are composed. Here the researches of Mendel and his followers come into play, revealing to us a new means through which we may hope ultimately to control even the character of those yet unborn. Here also we have just begun a conquest which we hope to carry on to

There is one other mastery over things in the small to which I wish to call your attention, one having in it a great power for the development of strong and vigorous human beings, ready for the further advances of the future. I refer to our new and increasing knowledge of disease-producing germs. Here also we have just begun a conquest which we hope to carry on to many fundamental results.

many fundamental results.

Thus there has been opened to us in a short space of time a varied and undreamed-of world in the small over which we are now to gain the mastery. Our analysis of previous progress shows that we have here something vitally new. It should therefore lead to important development. Our confidence in this is great, since a little reflection on the matter brings out the fact that we now have converging into one main stream many of the elements which have characterized previous progress.

The actual development which we thus anticipate will be realized only if science indeed makes the conquests which seem to lie out before us. Why, then, may we feel sure of such advance? Time will allow only a brief answer. A slight examination of the past will put in evidence the fact that the fundamental discoveries of the earlier ages came about mostly by chance. Men were not seeking systematically to know the secrets of nature. They learned a few things in a haphazard way. They had not found out how to make a systematic and all-embracing search through fields either old or new. Fresh discoveries continue to be made right up to the present and with greater speed than ever be-New sorts of questions are asking fore. for an answer. This indicates that the undiscovered regions yet to be found are vast To-day an increased number in extent. of persons are seeking the new. They have learned better methods of research and are able to go about their problem in a more systematic way. Undoubtedly there is still in human character the potentiality of great power to be released through the excitation of new discoveries. Therefore one can not fail to have the best of confidence that there is a long and important line of advancement now to be followed out.

Thus we have at hand every means of progress. The prospect is a pleasing one. He who works at this builds something into all subsequent human development. This is a labor worthy the mettle of the noblest intellect. The science of to-day is lighting the way of progress; and every real contribution to its results will make brighter the illumination of the future. I congratulate you that you have entered upon this labor. May the flower of science blossom at your touch and the vine of knowledge bear luscious fruit under your hand and the pure wine of its vintage flow forth to swell the stream of progress.

R. D. CARMICHAEL

DEFINITENESS OF APPOINTMENT AND TENURE1

THE college professor is rapidly being forced to occupy a new and important position in our public affairs and is receiving more of the

¹ Delivered before the College Section of the Association of American Agricultural Colleges and Experiment Stations, Washington, D. C., November 13, 1913.

recognition which his profession has long enjoyed in the older countries of Europe. A university professor who rose from the ranks occupies the White House; another is a prominent member of his cabinet; and large numbers of college and university professors are prominent in the direction of municipal, state and national affairs. This new appreciation of the teacher and the failure of some governing boards to understand their relation to him have led to a considerable discussion of his academic position from various points of view. Much of this discussion has centered around the matter of his tenure of office. Tenure is, of course, affected by the definiteness of the appointment, including its phraseology, and may be affected, though not necessarily so, by the method of appointment, which may vary widely without prejudice to the incumbent's tenure. Furthermore the method of retirement for old age by retiring allowances or pensions may have an important bearing, but need not be discussed after the very full presentation of this matter by Dean Davenport.

Although there has been considerable discussion of specific cases in which the matter of tenure has been involved, broad statements dealing with present customs and determining principles are few in number. The only satisfactory discussion I have found is that of President Van Hise² before the Twelfth Annual Conference of the Association of American Universities at the University of Virginia in 1910. In this address President Van Hise fully described the practise of the universities which are members of that association, and so clearly stated the principles which should govern that there seemed to be a general concurrence in his views. That association, however, includes only 22 of the leading American universities offering graduate work, 9 of which are not state-supported institutions, and only

² Van Hise, C. R., "The Appointment and Tenure of University Professors," Journal of Proceedings and Addresses of the Twelfth Annual Conference of the Association of American Universities, pp. 50-61; also in SCIENCE, Vol. XXXIII., p. 237. 7 are members of this body. It was evident, therefore, in order adequately to discuss this problem as it pertains to the land grant colleges, that facts must be secured concerning our present customs and the views of our members. Hence a questionnaire was sent to the presidents and deans of agriculture of all the land grant colleges. The replies received from forty-three institutions seem to justify the following statements.

Only eight institutions use definite forms for notices of appointment. Appointees are notified by the president in nineteen states, in ten by the secretary of the governing board, in two by both the president and secretary, and in one by the university treasurer. A formal acceptance is required at three institutions. sometimes only of instructors, and two use a written contract signed by the president and appointee. The time or conditions of tenure are specified in the appointment in nineteen institutions, and are not thus specified in ten. Duties are specified in the appointment in five institutions and merely by the title of the position in sixteen. In several colleges duties are thus stated if special reasons make it necessary.

The replies to the queries concerning the manner of appointment are neither conclusive nor illuminating, except in showing that there is no general usage and that it seems to be usually considered of but little importance. This is evidenced by the fact that in several institutions the appointee may be informed simply by word of mouth. Furthermore, some of the replies are evidently inaccurate, for some institutions state that they specify the time or conditions of tenure in their appointments which, as a matter of fact, do not do so. It is interesting to note that the few institutions which use formal appointments and are most definite in the form thereof are among those generally recognized as best administered and those which are most lax in this matter are among the smaller institutions. The most usual procedure is for the president to write the appointee that he has been elected to a certain position, naming the title and salary, and the date effective. It is usually stated

that the time of tenure and the duties involved are "understood" by both parties. The writer is convinced, however, that in most cases a definite statement of these matters is desirable in the appointment. A university president recently remarked that some one had said that all college presidents are liars. Obviously this exaggeration is due to the fact that no president, dean or director can remember all the "understandings" necessary to manage the affairs in his charge. The more business that can be done in writing the better, as is shown by the general practise of large business concerns. Doubtless railroad presidents would find it difficult to operate their roads and might also become eligible to the "Ananias Club" if they depended on "understandings" instead of written letters. In many cases this lack of definiteness in appointment is due to the fact that the institution has no generally established and generally understood policy concerning these matters, a situation which makes a system of definite appointment all the more necessary.

Furthermore, the appointment should state the principle and essential duties of the appointee. Usually the title of a full professorial position will be sufficiently indicative. If, however, an appointee is to be engaged in the college, station and extension work, or in more than one line, the appointment should clearly state the facts. Is it fair to appoint a man to an indefinite position and then expect him to do whatever sort of work he may be assigned, for some of which he may be poorly fitted, though otherwise well qualified? Should he be asked to change his line of work unless a new, definite and acceptable appointment is submitted to him? The by-laws of one institution states that "any teacher can be called upon for other duties without additional pay." Instances are not uncommon where dissatisfaction has arisen owing to assignment to work of a kind not contemplated by the appointment or previously "agreed upon." The replies to the questionnaire as to the appointment of professors for an indefinite or specific term were as follows. Twenty-two institutions appoint for an indefinite term; seven

use a probationary period of one year and two or three years, followed by indefinite tenure; eight appoint annually, but claim the custom of reappointing during efficient service-a policy often expressed by formal resolution of the governing board so as to be equivalent to indefinite tenure; two appoint strictly annually, and one uses "either" method. In a few institutions professorial appointments are "permanent." If this phrase-permanent tenure-implies tenure for life or until old age retirement, it is much better than the term "indefinite," which really means nothing. Associate professors are usually given the same tenure as full professors, except in three institutions wherein appointments are made for definite terms of from one to five years. The institutions appointing annually, with a probationary term, and for indefinite tenure, do not form any natural grouping or classification. Only two of the ten making annual appointments are among our larger institutions and in these appointees undoubtedly enjoy indefinite tenure, though technically appointed annually. The nine institutions wherein probationary appointments obtain are widely scattered and are relatively small colleges. In practically all of the larger institutions professors enjoy indefinite or permanent tenure upon the first appointment.

In reply to the question whether all faculty members were appointed annually and whether such a system was opposed or favored, from the ten institutions wherein the system of annual appointments is in vogue only two writers favored the system, while three opposed it and five were silent. Thus there is practically unanimous opposition to annual appointments and commendation for the system of indefinite or permanent tenure, at least after a probationary period. The questionnaire elicited opinions to the effect that annual elections cause restlessness; deter strong men from accepting places subject to annual election; discourage loyalty to the institution; are commonly perfunctory; and create an uncertainty incidental to changes in the personnel of the governing board. One replies

that inasmuch as college salaries are relatively low owing to the assumed permanency of tenure, that it must therefore be guaranteed as a matter of justice. Another cites fifteen years of unsatisfactory experience with annual elections. Only two correspondents favor annual elections, one of whom says, "it works no disadvantage" and the other writes,

I favor the system except as to the higher administrative officers for purposes of discipline and good service. I think the administrative officers should be allowed to feel secure in order that definite plans and purposes can be worked out.

There seems, however, to be nearly unanimous opposition to these views.

Several institutions observe annual elections, but practically guarantee indefinite tenure. Thus in Ohio the state constitution prevents any legislature from appropriating beyond its life and the university trustees hold that they can not legally contract beyond their appropriations. Hence appointments are made every year. However, the trustees have also passed a resolution stating that it is

their desire that teachers should remain securely in their tenure of office and that the legal annual election was not to be interpreted as any uncertainty of mind on the part of the board of trustees.

Appointments are annual at Cornell University, but

it is the established policy of the university that a man once installed continues indefinitely.

The notice of appointment also states that the salary is contingent upon the appropriations. It will hardly be questioned that at these two institutions professors enjoy permanent tenure, though technically elected annually. However, in some other institutions claiming to employ the same system, the situation is not as clear. One president writes:

All the other members of the staff are technically reappointed for the year when the budget for the coming year is made out. Any one not reappointed at this time (June) is continued on the payroll until the first of September, giving him three months' notice. Usually when the employment of any one is to be discontinued we notify him sometime before June that if the budget is approved we will not recommend his reappointment.

One can not help but feel that where institutional traditions are not firmly established or where frequent changes may occur in the governing board, a system of annual elections must tend to militate against permanency of tenure and to make removal easier. Even the necessary annual budget may sometimes have a similar effect if the governing board does not clearly understand that its adoption involves merely a statement and not a reappointment. The inconsistency of the policy of some institutions was clearly indicated by one president who stated that his professors enjoyed indefinite tenure, but who held that to terminate a professor's service "he should not be reappointed and the reason should be given him." Boards have been known to secure removals by the simple process of dropping names from the budget.

It is difficult to see just what advantage accrues from or what necessity exists for annual elections. Were the position of the Ohio trustees tenable, most state institutions would be forced to elect annually, for both state and federal appropriations may legally be withdrawn at any time. Is not, however, a professorial position analogous to one held under the U.S. civil service? A civil service appointee enjoys an indefinite tenure during good behavior and is protected against removal except for good cause; but at any time Congress may fail to appropriate funds for a given salary or may abolish a position. Have not the trustees of state institutions the right to make permanent appointments, qualifying them with a statement that in so far as salaries are derived from appropriations they are dependent upon them? Would not such a system conduce to greater permanency of tenure?

Professorial appointments for trial terms of from one to three years followed by indefinite appointment is a different matter and may often be a desirable system. It is evident that our larger institutions can command the services of our best men and can so determine the worth of a prospective candidate as to leave no doubt of his qualifications for permanent appointment. But at smaller institutions the full professor is often of the same grade as is the assistant or associate professor in the larger ones. It is not always possible to determine his worth or the wisdom of a permanent appointment until his ability is tested. Often young men are chosen who are expected to grow with the development of their departments. A trial alone will show whether they will or will not measure up to the expectations. Hence, a definite appointment for a probationary period, with the possibility of a subsequent permanent appointment is fair both to institution and appointee.

Information was sought by the questionnaire as to the tenure of assistant professors and instructors. Six institutions having indefinite tenure for professors appoint assistant professors for from one to five years and ten appoint instructors for a term of from one to three years. Only eleven institutions have indefinite tenure for all the faculty.

To the question whether short-term appointments for assistant professors and instructors were favored, twenty-two affirmative and fourteen negative replies were received. Most of our larger institutions have found such a procedure advantageous. Some of the comments on this matter are of interest. Dean Davenport, of Illinois, states that instructors being young men should move about from one institution to another, in order to gain experience and to work for advanced degrees; but that assistant professors only occasionally should be short term men, more particularly when they are first given responsibilities involving a good deal of trial. He remarks that sometimes when men are made assistant pro-President fessors that they stop growing. Hill, of Missouri, replies:

It seems to me that the appointment for short terms is desirable until the efficiency and prospects for growth of an instructor or assistant professor are pretty clearly indicated. I take it, however, that there will always be some assistant professors in an institution who have already demonstrated their efficiency, but whom the administration is not yet ready to recognize as permanent members of

the teaching force, preferring to see them first make good some of their promises in teaching and research.

These opinions seem fairly to voice the views of the majority, some of whom point out that short appointments of instructors encourage them to do graduate work.

It would seem that although a few institutions elect their professors annually, nearly all consider the term of the full professor as indefinite or permanent, at least after a probationary term. This being the case, the question of terminating the tenure of a professor arises. Three causes, viz., old age, gross misconduct or general inefficiency, may warrant his retirement. The matter of age retirement and the principles upon which it should be based depend largely upon the resources of the particular institution and need not be further discussed in view of Dean Davenport's masterly review of the subject immediately preceding the presentation of this paper. There would probably be no question as to the propriety of the removal of a faculty member for gross misconduct of such a nature as to make him an undesirable associate or teacher. Cases have occasionally arisen, however, where it has been claimed that men have been removed on account of their economic, philosophic or religious views, as expressed in their teachings. Probably injustice is sometimes done in this regard, but doubtless the aggrieved party has usually been removed more on account of his lack of a proper sense of propriety than because of his expressed doctrines. Undoubtedly we would all agree that absolute "academic freedom" must exist as far as the teaching of truth is concerned.

The really difficult cases are those in which the incumbent is generally inefficient or a misfit, in which it is unnecessary and undesirable to make detailed and definite charges, but in which there is no question that for the welfare of both the institution and the incumbent a severance of official relations is desirable.

With this situation in mind the questionnaire sought information by asking: If a professor is appointed with an indefinite tenure of office, what should be the method of terminating his position if his services are unsatisfactory, provided there are no specific charges against him?

Nearly all who replied to this question indicated that the president should hold a frank conference with the man and urge him to relocate, and should give him ample time wherein to secure a new position. Replying to the query as to what constitutes such ample time, three favored two months, five three months, two four months, fourteen six months and five a year. Two of our most experienced executives stated that they had found a year too long a period, as it interfered with the work of their institution. Dean Davenport has answered these questions so well that I again quote from his letter:

This is an exceedingly delicate question. It refers, of course, to that kind of lack of success which it is difficult to define and certainly against which specific charges can not be made. Personally I believe if the case is not flagrant and the institution is large enough and strong enough to do it, it is best to supersede the position in some quiet way and by reorganization to push the work ahead without the man. But if the issue must be met squarely, then I believe in doing it by the frankest method possible; namely, by discussing the matter with him and showing him why it is that the university must have a change. I think that in the case of a man's becoming undesirable in a responsible position, the very fact that he has been given this responsible position entitles him to great consideration. It seems to me that the best plan is for the institution and the man alike to understand the situation and both to do what they can to find another position where the man can presumably succeed. I do not mean by this that an incompetent professor should be peddled off on another institution; only this, that if the institution ever gave him a professorship, it must have been for a very good reason and his failure is most likely to be due to changing conditions. Under such considerations it is not difficult to find other places where the conditions are more favorable for good work. Except in rare cases, therefore, I would not make the notice definite, but rather indefinite.

Occasionally a case arises in which such treatment must be followed by definite action.

Sometimes a man refuses to make a reasonable effort to secure another position, even after he has been given ample time to do so. Under such circumstances we doubtless would all agree that it would become necessary to formally request his resignation.

In reply to the query whether under such circumstances the notice should be made a matter of record where it may become public, only four answered "yes," and all other replies were "no." There seems no good reason why such a matter should be recorded as public property unless the man himself makes such action necessary. This simply means that in most institutions such notice should be given by letter from the president and not by action of the governing board, which usually becomes public.

The final question asked whether there is any justification for a new managing board declaring all positions vacant and reappointing whomsoever they see fit. Only two replies indicated that possibly circumstances might arise warranting such action. The other forty replies are so emphatic in their condemnation of such a proceeding that the query might seem useless. However, according to published reports there have been one or two recent cases of such drastic action. Formerly such "turnovers" were much more common. Some of these replies may well be quoted if for no other purpose than to voice the universal sentiment of all college men. One writes:

It is a cowardly way to treat the situation.

President Snyder of Michigan writes:

A new managing board that declares all positions vacant is simply advertising to the world its own inefficiency and lack of appreciation of the great responsibility which has been placed upon it.

President Aley of Maine writes:

I know of no justification whatever for a new board to declare all positions vacant. It seems to me that such a proceeding will result in chaos in an institution. Certainly no self-respecting man would want a position in a college where such a thing is likely to occur. President A. R. Hill of Missouri expresses himself as follows:

I can see no justification for a new managing board declaring all positions vacant and reappointing whomsoever they see fit. The appointment by any managing board I regard as a mere formality. The real appointment should always be made by the faculty of the department concerned, including, of course, the president and dean who are members of that faculty, meaning by department, as a rule, what used to be meant by chair. Where the faculty of a school or college is small, as in the case of most law schools, the entire faculty of the school should be consulted. I do not mean that a formal vote of the faculty of the school or department need be taken either in making the appointment or in severing the relationship: but the actual sentiment of the faculty should be voiced in either action and when this is the case the action of the Board who are not educational experts, should be merely formal.

Mr. V. H. Henderson, secretary of the regents of the University of California, says:

For a new managing board to declare all positions vacant and to reappoint whom they see fit, is apt to prove a mistake. A wholesale violence of this sort has been proved by the history of American university life ordinarily to result in weakening an institution and hindering its healthy and normal development. As a matter of university planning it is very much better if a managing board shall not itself be a "new board"-that is to say, the governing board should be made up of a body of men whose terms expire at different times, so that the board shall always contain a considerable proportion of members who are thoroughly acquainted with the work of the institution and sympathetic with the purposes and ideals of American university work.

Mr. Henderson then makes the same point as does President Hill:

In the University of California, all initiative as to appointments, promotions, salaries and changes of title is with the president of the university. He invariably obtains the approval of the finance committee of the regents to the creation of a new position, or to changes which involve increase of expenditure, but the initiative in these matters remains with him and questions of personality remain with him. That this should be the case is an essential for the best success of any educational institution, whether it be a university or a city school system.

Mr. Henderson strikes at the basis of much of the trouble in regard to tenure. Where governing boards consider it their duty to take the initiative in the appointment or retirement of members of the faculty without the approval of the president, trouble is certain to ensue. With the formation of single boards governing all a state's educational institutions, a system now being tried in several states, this policy becomes all the more necessary, for it will be entirely impossible for members of such boards to have much personal knowledge of the fitness of the candidates.

I have endeavored to present to you the prevailing custom upon these matters in the landgrant colleges. Evidently, there is a considerable divergence of policy among the several institutions, the smaller of which may sometimes need to pursue a somewhat different course from that found satisfactory to those enjoying larger resources. However, it would seem fairly evident that there are certain general principles concerning the matter of definiteness of appointments and tenure which should be observed by all. If these could be clearly formulated by our committee on college organization and policy, and then be adopted by this section, would not such action be of considerable value in encouraging a more uniform practise and be a most welcome support to many of our college executives?

E. D. SANDERSON

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THE PORTO RICO SURVEY

THE New York Academy of Sciences has begun a scientific study of the island of Porto Rico along the lines of geology, paleontology, zoology, botany, anthropology and oceanography. With the assistance of a friend, the academy has voted to expend \$1,500 a year for five years on this work, and cooperation with the academy has been assured by the American Museum of Natural History, the New York Botanical Garden and by scientific depart-