

LETTERS

(Continued)

of the executive secretary by the electorate despite his direct control over interests of its individual members.

(4) Nomination by petition, an essential safeguard of the preferences of the electorate, cumbersome as it always has been, becomes ever more cumbersome with the increased size of the membership and with retention of the requirement that a petition for nomination requires the signatures of 1% of the members of the society. To this continually increasing difficulty of nomination by petition there is now an uncertainty (the proposals are ambiguous on this point) as to whether divisional councilors can be nominated by petition at all. No provision for such a procedure is made explicitly in the relevant section: article VII, paragraph 6.

Timing

Provision for a secretary and treasurer-emeritus and the ages of the incumbents suggest that the changes are being proposed at a time when the secretary and treasurer, who have long served ably and devotedly in elective office, may be contemplating retirement, and questions about their successors come naturally to the fore. Enhancement of the powers and compensation of the secretary at such a time seems a gratuitous unkindness to Karl K. Darrow (even though he may support the changes), who has served long with wit and self-effacing dedication. Why not postpone changes until successors to the long incumbent secretary, treasurer and editor win the popular approval of the society? The motivations advanced for making changes now convey no convincing sense of urgency. Nowhere is it stated that rejection of the amendments will impair the effectiveness of the society or that an emergency situation exists.

The procedures

The proposed changes are the most drastic in the history of APS and we are told that they have been under consideration for well over a year, yet there has been no published discussion of the pros and cons despite

specific requests for such from the floor at the annual business meeting of the society, January 1966, confirmed by a letter⁵ to the president. Since June 1966 a member of the society could contribute suggestions for changes. Whether any suggestions for changes will be accepted or rejected, however, will not be known until the revised amendments, if any, are distributed to the membership with the ballot forms; so there will be no opportunity at all for public discussion of what is finally submitted to the membership.

Recommendations

Some physicists may feel that even a radical experiment in concentration of power and major structural changes in our society, however instigated, although promulgated without opportunity for public discussion, still warrant approval if they have been recommended by eminent elected officers of APS. But have we chosen those officers for their political sagacity and experience or for their scientific accomplishments? As scientists we are unaccustomed to accepting the recommendation of authority unquestioningly. When the recommendation is in an area different from that in which the authority has established his eminence, then surely each of us is justified in making a judgment uninfluenced by that recommendation.

The increasing cost, complexity, and social impact of the activities of physicists warrant expectations of a role of increasing importance for APS in the lives of its members and in society at large. To relinquish long-held democratic prerogatives and to

invite what Jefferson called "the lethargy of despotism" at such a time seems the opposite of common sense. An APS symposium on physicists' problems of self-government would provide a forum at which the membership could acquaint itself with current issues while generating a consensus for appropriate constitutional change. In any society only an informed electorate can take interest in and exercise discretion in its affairs and give meaning to what otherwise become empty gestures toward democratic consensus.

Few members of APS may care now to take an active part in the government of their society. But if they do not relish the prospect of having to tread gently before an omnipotent executive secretary and wish to reserve for themselves the possibility of exerting an influence in the future on the decisions of their society, they might be prudent to reject the proposals which will soon come before them.

References

1. *Constitution and By-Laws*, Bull. Am. Phys. Soc. 1, 6 (1926).
2. Societies and Awards, *PHYSICS TODAY* 19, no. 6, 105 (1966).
3. Bull. Am. Phys. Soc. 11, 666 (1966).
4. *Basic Operating Policies of Trade and Professional Organizations* including Model Association By-Laws, available from Association Service Department, Chamber of Commerce of the U. S., Washington, D. C.; *Charter Constitution and By-Laws of the American Chemical Society*, Bulletin 5, Am. Chem. Soc. (1964).
5. L. Cranberg, Private Communication to J. A. Wheeler, dated 15 February 1966.

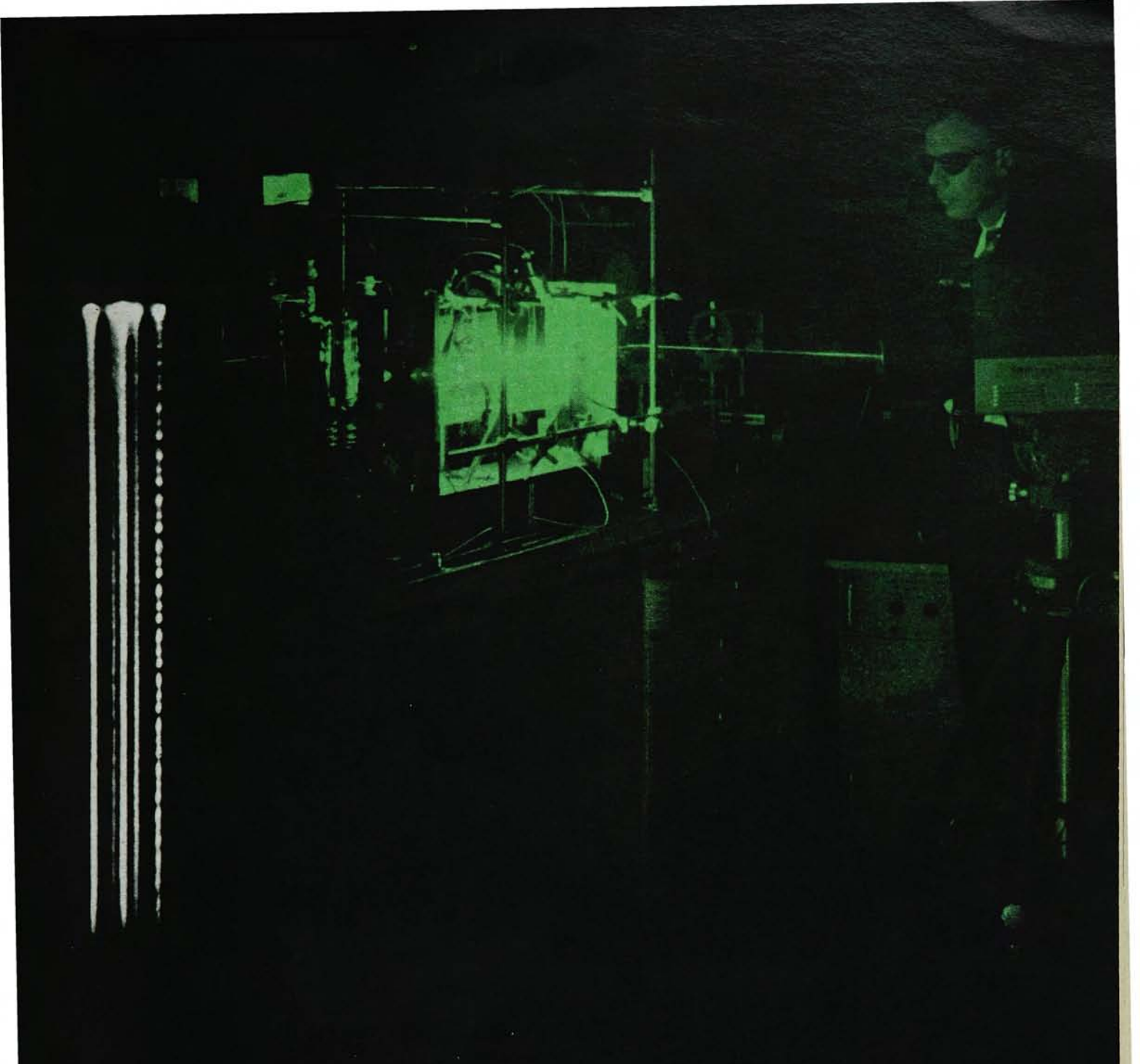
Lawrence Cranberg
University of Virginia

Developments calling for updating of APS constitution

Dear Larry:

Thanks for the friendly arrangement that lets us respond to your letter in the columns of *PHYSICS TODAY*. You recommend vetoing all amendments to the constitution of the American Physical Society proposed in the June issue of the *Bulletin* and going on as we always have gone on. Would that that were possible! Then the membership-elected council would not have had to struggle for the last three years with the problem of reorganization.

It could leave the operation of the society in the future largely to two long-term officers, the secretary and the treasurer, with occasional advice of the council, as worked out so well in older times. Our rapidly growing society (5000 members in 1945, 11 000 in 1955, 23 000 in 1966) would then be set off still further from such other learned societies as the American Association for the Advancement of Science, the American Mathematical Society, the American Chemical Society,



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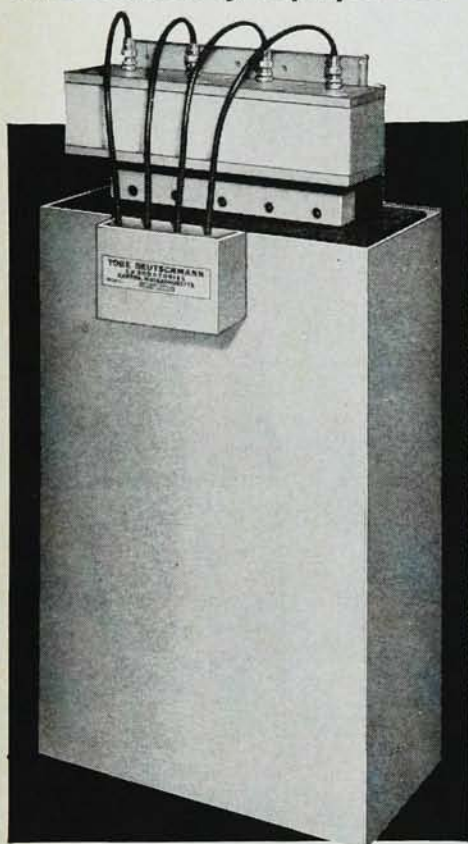
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the American Philosophical Society and the American Library Association through having by far the smallest fraction of its members actively involved in the affairs of the society—or even any effective way for our fellow members to take part.

Impending end of service of long-term officers; inadequate machinery to bring divisions into closer connection with concerns of the larger society. Two considerations more than any other have kept our council and its committees at work on organizational questions and impelled it to put the proposed amendments before our 23-000 colleagues this year rather than next year: (1) The terms of service of our wise, dedicated and indispensable secretary and treasurer are drawing near an end. (2) The present constitution rules out any representation of our divisions on the council. There are now seven divisions, the newest being the Division of Nuclear Physics. They are concerned with many of the most active fields in physics. The artificial, paper-imposed constraint against their representation on the council costs the society in effectiveness. It impedes the planning of even better meetings. It has caused two of our important divisions in despair even to consider seriously leaving our society—a move they have put off in hopes that the constitution can be amended to remedy the situation. Still another large and distinguished group of our colleagues has debated setting up an independent Society for High Energy Physics. They have considered as an alternative applying to become a Division of Fields and Particles of APS. The organizing group is waiting to see what happens to the proposed constitutional amendments—which they have gone on record as favoring—before making a decision. In brief, officers are approaching the end of their service and physics is growing; or "Time and tide wait for no man"!

Karl Darrow will be 75 on 29 Nov. and Shirley Quimby will have passed 73 on 21 Aug. To go on as if their unique service would never end, without settling on policy for the longer

term, would be to gamble with the future of a great society, with a budget of over \$1 million a year. Yet one can not even begin to think about successors until one knows what kind of position is to be filled.

Continue the kind of organization in which two long term officers both make policy decisions and carry them out (with a largely advisory function for the council)? Or recognize that the subject matter of physics is becoming too diverse, and the size of the society too large, for any one person, or pair of persons, however wise, to carry such a heavy responsibility?

Proposed executive secretary to execute policy set by council; load on council greatly increased. The council saw no reasonable solution but to lighten the load of responsibility on the secretary in the future dispensation: to ask him to carry out the policies of the society but no longer to impose on him the additional burden of developing those policies. In other words, with increasing size it would seem desirable to modify the secretaryship, appropriate for a smaller society, into the less independent executive secretary, which is the more common arrangement in the larger professional organizations comparable in size to our own. This change in the nature of the secretaryship hardly seems likely to produce an "omnipotent" officer, before whom one must "tread lightly"! If in the future a meeting by some misfortune should not be well planned, the membership will not have to look back and forth uncertainly between an elected council and an independently elected secretary to determine the responsibility and turn at length on itself because by its own election it produced this divided responsibility! In the proposed new arrangement the responsibility would fall directly on the elected council itself—for this council is responsible for policies and for choosing and discharging the executive secretary. Our colleagues on the council are busy physicists. They have not gone out looking for more to do. They have recommended a large and—to pressed council members—somewhat dismaying increase in council responsibility for society policy

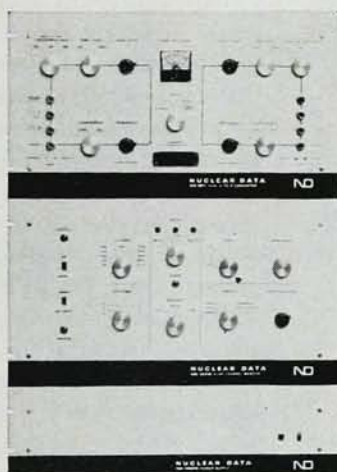
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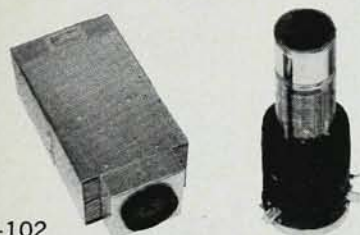
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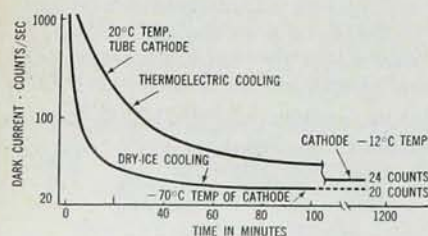
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because they feel that more physicists must be drawn into the active management of the affairs of the society.

Wiser heads than ours, and colleagues who know something about the administration of universities and foundations, have noted that what is everybody's responsibility is sometimes nobody's responsibility. They have recommended, and the council has endorsed, the idea of an executive committee of the council, which, as in other professional societies, will be elected by the council and can meet more frequently than the entire council and see to it that needed items of business do not get neglected. The council, as elected agent of the members, would of course always determine policy and exercise ultimate authority.

If our fellow members approve of the concept of executive secretary the council can start to move ahead. Otherwise it will have a hard time knowing what to do when Karl Darwin can no longer serve us.

The managing editor in the proposed revision of the constitution would be renamed editor-in-chief and, like the executive secretary, be elected by the council. This clarification of the line of responsibility for the operation of our three great journals, approved by the committee on the revision of the constitution and by the council, has the full support of our distinguished managing editor, Samuel A. Goudsmit.

Representation for divisions. In dealing with the questions that you have raised let us turn now from long-term officers to divisions. No one who was present at a meeting of the council a few years ago will forget a distressing scene. Divisional officers, many of them with long and distinguished records of service to physics, had been kept waiting outside the council's room while it dealt with other business. At length they were summoned in and invited to take back seats. Then they had a chance to express themselves briefly as to desired places and times of meetings. A few decisions of the council were then communicated to them and they

left. No councillor or officer of the Physical Society nor any divisional officer who was present could take any satisfaction in this way of treating with the responsible emissaries of distinguished and important divisions of our society. And no one did take satisfaction in the unhappy spectacle. Neither did anyone plan that it would come out that way. The rudimentary liaison between council and divisions comes about, not because that is how everyone wants it, but because of the way the constitution is written.

We can't go on this way. Years ago the Optical Society and the Acoustical Society split off from the Physical Society. That was loss enough. Do we really want to split off also Atom and Electron Physics? Chemical Physics? High Polymer Physics? Solid State Physics? Plasma Physics? Physics of Fluids? Nuclear Physics? Field and Particle Physics? Thank heavens we feel today that the way to maintain the unity of physics is to have a society in which those in one field meet with their colleagues in other fields. The American Institute of Physics is a great and wonderfully useful organization, but it is not meant to pick up the pieces of the American Physical Society. An institute is no substitute for a society. However, the APS will not be a full society until our divisions are treated as more than second class citizens.

No one has been able to suggest any satisfactory way to bring divisions into closer connection with the work of the society as a whole other than representation on the council. From no representation at all, a minimal step is one representative per division. That is what is recommended to our membership by the council in the proposed amendments.

Also included in the amendments is a provision for the appointment of a program committee by each division. This committee would cooperate with the executive secretary or the relevant regional secretary of the society on the planning of society meetings. This is a new departure for most divisions. If adopted, it should bring us still more interesting meetings, covering better than ever the entire spectrum of physics.

Membership in a division. Who

now belongs to divisions? Between 4000 and 5000 members—about 20% of our total. This does not count those in the newly forming Division of Nuclear Physics or the potential Division of Fields and Particles. Moreover, it has been estimated that more than twice as many members of the society are actively concerned with solid state physics as have paid the modest fee required to become a member of the Division of Solid State Physics. It is conceivable that similar figures hold for other divisions. Consequently the divisions may well span closer to 80 or 90% than to 20% of the physics interests of our fellow members.

Who will join a division if the proposed amendments are adopted? First, nobody has to join any division; that is clearly spelled out. Second, everyone acquires the right to belong to one division free of annual dues. Third, subject to the payment of a modest annual due for each additional division, one can join as many divisions as he pleases.

What about undue "voting weight" for the member who belongs to a division? First, the extra "weight" won't be very great—one division councillor (per division) as compared to the seven or eight councillors-at-large that everybody gets to vote on. Second, maybe he deserves a little bit more voice in the affairs of the society if he is interested enough to join a division. Finally, it has been estimated that probably 80 or 90% of our members will choose to join at least one division and that it will be an infrequent member who will choose not to interest himself in any division.

Other points. Forgive us for dealing at such length with what we conceive to be your major points. On other points perhaps a word or a phrase will be enough to indicate the kind of considerations which entered into the many months of deliberation of the council and its committees:

1. "Formidable barriers" to the removal of a council-elected executive secretary? Complain to the council! Look at their names on the cover of any *Bulletin*. Our membership elected them. See if you don't think they are both responsive and responsible.

2. "Provision for discussion of issues" concerning the constitution? Announcement of public meeting on organization issues in *Bulletin*. Meeting convened, report given, public discussion held at time of annual business meeting in New York, January 1966. Extensive formal printed report on organizational issues by committee on revision issued to members attending. Updated report published in June 1966 *PHYSICS TODAY*. Proposed amendments themselves published in the June 1966 *Bulletin of the APS*, with request that suggestions for changes be communicated to council through office of secretary. Careful review of suggestions by council. Provision for final consideration of final version of amendments by membership later this fall.

3. How will the proposed changes affect the participation of the membership in policy making? First, they will help ensure election of councillors with a spectrum of interests wider than ever before. Second, the councillors—our elected representatives—will have a bigger share of responsibility than ever before.

4. At what rate will the composition of the council change? Four-year terms expiring in different years—half thus expiring in two years. The provisions of the present constitution, here as elsewhere, have been taken over unchanged except when there was impelling reason for change.

Your letter convinces us that you are deeply interested in the welfare of the society. It makes us believe that our fellow members will also be interested in the important organizational issues that confront us. We are glad that you have given us occasion to discuss these issues. This reply will have met an important test if it convinces you, not to veto the proposed amendments, but to vote them in. Without some such modest changes in organization our society will be in serious difficulty.

Sincerely,

John and Charlie

(John A. Wheeler)

Princeton University

(Charles H. Townes)

Massachusetts Institute of Technology

Dear John and Charlie:

I am disappointed that in your thoughtful and detailed reply no precedent is cited from the annals of American learned or professional societies for so massive a delegation of authority to an executive secretary as is uncompromisingly proposed. I am disappointed, also, to see us directed along a new path of government-by-specialists under pressure of threats of secession, without discussions of consequences and alternatives. Unfortunately, our differences can hardly be resolved in so belated and hurried an exchange as this, nor have we even begun to discuss the arrangements that other societies, confronting problems similar to ours, have found satisfactory. I regret that veto of the proposals, which apparently will be offered as a package, appears to be the indispensable preliminary to fuller discussions of the issues and of ways of resolving them.

Sincerely,

Larry

An encouraging effort

The recently proposed amendments to the APS constitution and bylaws strike me as a genuine and encouraging effort to improve the business organization of the society, its elective procedures and its communications with the members at large. Although there will doubtless be differences of opinion in some details, the proposals generally seem to deserve the approval and support of the members. During the last 20 years or so criticism of some society procedures and activities have been justified to some extent, but the administrative and procedural inadequacies have scarcely deserved the sense of outrage engendered in some quarters. In keeping with our times the dissidence seems to have been rather widespread. But no member of sound mind has found grounds for suggesting that the affairs of the society have been controlled by a group of sinister archvillains bent on its destruction. Furthermore anyone familiar in the least with administration of such a large and complex organization realizes that it would be utterly impractical, and a completely misguided interpretation of "democratic" principles, to propose (as some