

quite dark outside, although it may have seemed much lighter inside than out for some time. Here again the difference may be due to the blue rays which are most conspicuous at twilight. If this hypothesis were correct it would seem natural that the mercury vapor light would be most, the ordinary arc less, and the sodium carbon of the flaming arc least attractive to the moths.

In July when a swarm of brown-tail moths swept over Boston the vicinity would have been a good time to observe the effects of the various kinds of lights. Any information which the readers of *SCIENCE* could furnish would be gratefully received.

OWEN BRYANT

COHASSET, MASS.

QUOTATIONS

THE AMERICAN UNIVERSITY AND THE COLLEGE PRESIDENT

JUST now, in academic circles, there is a strong disposition to question the necessity and the usefulness of the president in American colleges and universities. It is claimed that this official as now existing is an anomaly in academic development. He is a monarch in what should be a democracy. While our universities are growing at an amazing rate, in wealth, in influence, and in population, the position of the individual professor in the university is not improving. In dignity and in freedom his condition compares very unfavorably with that of his colleagues in Germany or England. It is claimed that one prime cause of this evil condition is found in the exaggerated importance attached to the university president, who holds a monopoly of public attention on the one hand and of academic power on the other. If all authority of the president, and most of that of our boards of trustees were relegated to the university faculty, it is claimed that these evils would disappear.

In this statement there is considerable truth. The university president is an anomaly. He represents a temporary stage in the development of the democracy of science, of the republic of letters. The university as

such requires no leader. Its executive should be its servant, and as time goes on scientific eminence will more and more outbalance administrative skill. The university president of the next century, should the title continue, will stand in relations to the university faculty very different from those which now obtain. All this we may admit, but in the institutions of higher education, as they now exist in America, the practical need of a continuous and firm-handed executive can not be questioned. In my judgment the president ought not to stand alone in this responsibility; no appointment in the faculty and no single act of importance, as related to academic work, should be accomplished without the consent and approval of the academic faculty. The president should represent his colleagues in all forward movements. But the initiative should rest somewhere, and as things now are it should rest with the college president. I use the term "college president" advisedly, not "university president." A university actually organized needs no central controlling authority, but a college takes its individuality, its color and its movement from some master spirit. To call our colleges universities does not make them such. To draw the line between "college" and "university," terms which with us still mean the same thing, is now the most important matter in our higher education.

The formation of boards of control, made partly of professors, partly of alumni, and in part of outside business men and men of leisure, as known in England and Australia, is in every way less satisfactory than is the American adjustment at its best. Such boards seldom handle investments to the best advantage, while they are likely to occupy themselves to the more interesting labor of meddling with the individual affairs of the college faculty.

In a university, as finally organized, the professors are equal. Their position in science and in education is assured. They are chosen by their fellows on the strength of well-established reputations. It is not necessary to introduce on short notice a dozen new instructors to meet an incoming class of unusual size.

Such assistants as there are are personal helpers of the professors, below whom there is a great gulf fixed, and administration is divisible among two score heads instead of being centered in one office. Each professor is the head of his own department of *Anstalt*, and quite independent in most of his affairs. He is his own president, and the university is no more than the sum of all its parts.

The American universities are not yet universities. They are destined to become such, but not until as a first step the first two years, the students and the teachers of the junior college are relegated to the high school, or the college. To abolish the president, or to cut off his salary, to change his powers materially, or to find some other type of man, would not affect the case materially, so long as teaching of boys is regarded as university business. This is college business. The college is a co-operating organism far more than the sum of all its parts. It has moral duties, more vital than its duties to research. So long as the institution tries to carry this double function of college and university in the same buildings with the same staff, the present difficulties must persist. In this same period we must bear the double criticism that our professors do not do their part in the advancement of science, and on the other hand that they talk too much of research and give too little attention to mental drill, and to the moral and social development of boys under their charge.

Besides all this, all our universities or colleges are still in process of creation. Not one of them is an existing institution. The president must furnish the initiative, set the pace, mark the color of a growing institution. He must consider relative values, what expenditure of money will count for most in the long run, and the ways and means by which the necessary money can be obtained. The Duke of Wellington once observed that an army may be commanded by a very ordinary man, but "not by a debating society." "An institution is the elongated shadow of a man." Taking any of our great state universities as an illustration, can we believe that any one

of these has reached its final status? Do we not feel sure that every one of these will have in another ten years double the resources, double the equipment, double the prestige it has now? Do we believe that in any case this change would be possible unless the university had the service of individuality in its executive relations? The people pay for the university, and the people in America pay not because the maintenance of universities is a function of government, but from the feeling that the university is doing their work and that there is no better use to be made of their money. The universities on private foundation depend equally on public appreciation, and in equal degree they are forced to appeal to their own public. So long as no single institution of higher learning in America has its permanent form, so long as its administration is a struggle, not a function, so long as we all agree that each school must and should die if it can not progress rapidly and toward some ideal, every college or university will recognize some leader, and this leader will have most of the functions of a college president. This fact will not justify all the things any college president may do, not even most of the things some individuals among them do. Still on the whole their operations have been marked by wise patience and well considered action. We can not do without them yet. No one will look forward more eagerly than they to the time when they and their kind will be found unnecessary in the higher education of America.—President David Starr Jordan in *The Independent*.

SCIENTIFIC BOOKS

Principles of Microscopy, being a Handbook to the Microscope. By Sir A. E. WRIGHT, M.D. (Dublin), F.R.S., Director in Medical Charge of the Department for Therapeutic Inoculation, and Pathologist, St. Mary's Hospital, London, W. Pp. xxii + 250; 18 plates and 97 figures in the text, also a diffraction plate for use in the experiments. New York, The Macmillan Company. 1907.

The distinguished author of this treatise is