the faculty with power. This is in accordance with the recommendation made by President Schurman in his last annual report. Hitherto the deans have been nominated by the president and appointed by the trustees.

At Harvard University Dr. L. J. Rhea has been appointed assistant professor of pathology, and Dr. Dunham Jackson instructor in mathematics.

Dr. Alexis Harding, of Geneva, N. Y., has been appointed to the department of dairy husbandry in the Agricultural College of the University of Illinois with the title of professor of dairy bacteriology in the college and chief in dairy bacteriology in the station.

Dr. Karl M. Wiegand has been appointed professor of botany in the State College of Agriculture of Cornell University.

DISCUSSION AND CORRESPONDENCE

UNDERGRADUATE RESEARCH WORK IN MEDICAL SCHOOLS

To the Editor of Science: A recent article in Science (November 29, 1912) by Mr. Drinker comments upon "Undergraduate Research Work in Medical Schools." In this article I find certain points that deserve comment. One of these points is this:

> If we classify all these schools upon the basis selected by Mr. Flexner in the first report of the Carnegie Foundation in Medical Education, namely, upon the possession or lack of a two years' college entrance requirement, we find that of the schools permitting undergraduate research five fail the test.

The University of Cincinnati is one of the five. Another point is contained in the clause, "Schools permitting research and giving no visible time for it," etc.

I desire to point out that unless qualifications are added to such statements they are very misleading; and also I desire to point out that making the point of a one-year or a two-year requirement means absolutely nothing unless the facts concerning the enforcement of such a requirement are known, and unless the requirement itself is a definite one. I make this statement upon the basis of certain facts that I have collected in the past year.

The University of Cincinnati demands for entrance to its college of medicine one year of specified work in subjects which are generally conceded to be advisable, if not necessary, premedical subjects; namely, physics, chemistry, biology and modern language. At the University of Cincinnati, a year in these subjects means a certain amount of ground covered, in a certain amount of time, *i. e.*, three lecture periods (hour periods), and two three-hour laboratory periods, per week. The admission committee of the college of medicine, composed of the heads of the departments of chemistry, anatomy and pathology, have insisted that students coming from other colleges should present a *working* knowledge in physics, chemistry and biology equal to that demanded of University of Cincinnati premedical students. In the past year or so a few students have been refused admission by our admission committee, in spite of the fact that they had had a college year of physics, chemistry and biology, but had had courses in these subjects which could not reasonably be expected to produce the results that we demanded, or which did not produce these results, as proved by practical, oral, tests. Such students, however, had no difficulty in entering colleges whose announcements place them in the first group of Mr. Flexner. Apparently it is sometimes true that a one-year standard is a higher one than a two-year standard. It makes a great deal of difference whether a school lives up to a standard of efficiency, or a standard of prose (or poetic terms).

With regard to the "visible time" for research, I have no fault to find with Mr. Drinker, because in spite of everything he reaches a conclusion that appeals to me, but "visible time" in a schedule means nothing. If there is no "visible time" it may mean that the schedule has been arranged to suit the students who have just met the requirements, and that, so to speak, "invisible" time is a plenty for those who have more than met such requirements. But even aside—even admitting that all the students just meet the requirement—one needn't treat them all alike. As a matter of fact, it were well to try to treat

all differently. It is interest and enthusiasm we are after in medicine—not the dead routine of a schedule. We need very badly pedagogic vitality. One man may make, or be able to make, twice the progress of another in a certain subject. Why tie him to the class schedule? Why not take him into your own laboratory, for his class periods, give him an assignment of special work, and talk it all over with him. It is a stimulus to students and teachers. It makes for progress in the student, not for stagnation. It widens his perspective, and not infrequently wakes the teacher. A schedule is made for the general mediocrity, and in its planning visibility is a prime necessity.

PAUL G. WOOLLEY,
Dean
COLLEGE OF MEDICINE,
UNIVERSITY OF CINCINNATI

A PROPOSAL FOR THE CONTROL OF CERTAIN MOSQUITOES

WITH the discovery that a number of diseases are transmitted solely by certain mosquitoes the control of these insects has become an important problem. But for successful control work exact knowledge of the species involved and of their habits is essential. Until a decade ago Réaumur's admirable presentation of the life history of the common house mosquito (*Culex pipiens* L.) has been almost universally considered applicable to mosquitoes in general. Nothing was known of the specialization of habits in the different species and it was generally supposed that in temperate regions all mosquitoes hibernated in the adult female condition, to deposit eggs and start a new generation with the return of warm weather. Students of the group now know that there is great diversification of habits and that the old generalizations apply to but a very small proportion of the many species of mosquitoes. Nevertheless, the old ideas persist with many and are still disseminated in well-meant attempts to popularize the subject. One often encounters recommendations for mosquito-control based upon these old ideas and leading to failure and useless expenditure.

The greatest misconception is that swamps and bodies of stagnant water in general continue to produce mosquitoes in quantities throughout the warm months and that to reduce mosquitoes it is only necessary to oil or petrolize such places at sufficiently frequent intervals. In fact the bulk of the mosquito population of our northern woods and swamps (and this is true of Eurasia as well as of North America) is derived from larvæ which develop in the snow-water of early spring. During a short period all the lesser bodies of water swarm with mosquito-larvæ, to shortly become, for the remainder of the season, practically barren. The larvæ hatch from eggs which were deposited the previous summer on leaves or rubbish in depressions of the ground. There is but a single brood and the larval period is short; the female imagos are long-lived (weeks and even months) and the egg-stage lasts through the winter to the following spring.

The species of mosquito which conform to the old idea, hibernating as female imagos and producing a series of generations during warm weather, are, in temperate regions, few in number, and their control is comparatively a simple matter. It is true that in villages, towns and cities even in the northern states these Culex mosquitoes will breed in tin cans and bottles on waste lots, in cesspools, rain-water tanks, rainwater barrels and other receptacles, and cause much annoyance. A community wishing to rid itself of such mosquitoes must carry on a warfare directed against these particular mosquitoes.

The species hibernating as eggs and developing in early spring (mostly belonging to the genus *Aëdes*, sense of Dyar and Knab) are, on the contrary, numerous in species and individuals, and under suitable conditions very annoying. Their control, through destruction of the larvæ, is a difficult matter. Petrolization, the method most recommended, must be carried out at just the right time. As the larvæ occur in practically all the numerous pools of snow-water scattered through woods and fields, operations will have to be very extensive to bring appreciable results. More-