it will resemble pre-medical training in being limited chiefly to the basic sciences. It will be one of several elective programs in biology and will be parallel to the present courses of study in botany and zoology. It is expected to start at the beginning of the new term on July 1." Work will be offered in the sciences fundamental to agriculture, such as botany, zoology, chemistry, genetics, bacteriology and entomology; it will not attempt to duplicate the training in practical agriculture given in agricultural colleges. Where such training is necessary students will obtain it from other institutions after graduation. The first year of the program will parallel that of most university freshmen, with emphasis on mathematics and science. During the next three years, courses will be given in the basic sciences, especially those most closely related to agriculture. Specialists from the Connecticut Agricultural Experiment Station and the Schools of Forestry and Medicine will be called upon to teach special subjects. The administration of the program will be under the direction of Dean Charles H. Warren, of the Sheffield Scientific School.

# DISCUSSION

## NATIONAL LEARNED SOCIETY GROUPS AND THE PUBLIC INTEREST

No American scientist can to-day view the world as it is without knowing that an economic, political, educational and moral crisis threatens our very national existence. Probably no group of citizens not in the armed forces has responded more completely than the scientists whether employed in teaching or in scientific state and national bureaus or in private enterprise. Yet the scientists are under widespread attack because large numbers of scientists in government and college employ have sold their services, "on the side," to private interests. Some concerted effort must be made to restore scientific progress to its proper place of primary service to the public interest.

The fact that scientifically America was relatively unprepared is not disputed. Despite the fact that for some years the imminence of a crisis was obvious, yet in stocks of essential metals, rubber and rubber substitutes American scientists and the Army and the Navy made absolutely inadequate preparations.

The "cartel agreements" in aluminum, in rubber substitutes, in minerals vital to all progress in quantity production dependent, for example, on rapid tooling were made with the assistance of many scientists supposedly employed in public service. Our long delay and the deaths of many thousands of our soldiers must still be laid at the door of those who prevented the American housewife from enjoying her right to the aluminum, the electric power and the gas, and the other great achievements of modern science before the war crisis. The monopolistic practises prevented greater production facilities from being developed.

To conduct the war to which Germany and Italy devoted all their resources for so many years has required of England as it requires of America the intense devotion of every resource in England and America that liberty may not perish in the universe.

To secure the participation of the small industries has been and continues to be one of the vital bottlenecks in production. No less a personage than Secretary Ickes has openly charged the National Academy of Sciences with dereliction in its service of the public interests. Private contracts with great corporations made by professors in colleges and by scientists actively on governmental payrolls have prevented the government, *i.e.*, the Army and the Navy from receiving that advice so essential to democratic processes even in quantity production required by the war effort. When Secretary Ickes requested aid from the National Academy of Sciences and even from government agencies such as the Geological Survey, men were given him whose primary interest was in serving the great corporations which these men represented "on the side." These charges were made by Secretary Ickes in open Congressional hearings held for the purpose of aiding the smaller industries.

In view of the fact that public records, notably government publications concerning the activities of the notorious National Electric Light Association wherein hundreds of college teachers including leading men in our foremost technical schools and universities were reevaled to be on the payroll of the association, make it seem imperative that some organized group take up actively the defense of the scientific group as a whole and to make possible that the public interests be served properly by men with only that end in mind.

Towards this end I introduced the following resolution on January 30, 1943, at the New York meeting of the American Council of Learned Societies to which I was an accredited delegate of the History of Science Society.

The American Council of Learned Societies regards with disapproval the extensive inroads made into university and college staffs of America by great corporations and public utilities; these have been revealed somewhat accidentally, and most unfortunately even in connection with criminal actions or other actions affecting the public interest.

In all matters of the public interest, the American Council of Learned Societies affirms its belief that in a democ-

racy the professors in universities and colleges should serve only the public interest.

We recommend to the university and college administrative officers that all teachers in institutions of higher learning be required to note to their college officials their contractual connections with corporations or private or even public utilities. These connections should be noted after the teachers' names in some readily accessible publication for each institution, so that any pronouncements may be judged by the public and the press as to whether such pronouncements emanate from a financial interest or from an academic (unpaid) interest in the public welfare.

Coupled with this resolution it is expected that an act will be introduced into Congress to compel all so-called expert witnesses who testify before Congressional committees to record their affiliations in advance of their testimony and that such connection be properly indicated when the expert testifies.

By such processes Americans may hope that the scientists will re-establish themselves in the confidence of the public which they serve.

I invite correspondence from all members of scientific societies who feel that the movement is worthy of academic and scientific support.

LOUIS C. KARPINSKI,
*President, History of Science Society*
UNIVERSITY OF MICHIGAN

## ABNORMAL NITROGEN METABOLISM IN BURNS

CERTAIN patients suffering from severe burns have shown gross abnormalities in nitrogen metabolism. The observations suggest that the nutritional status of patients with burns needs careful attention.

Eleven of twenty-two severely burned patients excreted excessive amounts of nitrogen in the urine. Sometimes as much as 45 grams were excreted within 24 hours, or an amount equivalent to the catabolism of 250 grams of protein a day. Such losses cause a serious nitrogen deficit.

Large increases in the residual nitrogen of the urine, both in the absolute amount and in the percentage of the total nitrogen excreted, occurred in some of the patients. Sometimes 80 per cent. of the nitrogen excreted was in this form.

Plasma studies showed a similar abnormality in the nitrogen partition. There was present an azotemia with an increase of urea, but the residual nitrogen of the blood plasma was also markedly increased.

At present it is not possible to state whether the residual nitrogen present in the blood and urine is polypeptide nitrogen, as suggested by other observers.[1, 2] However, it does yield by hydrolysis large amounts of amido and amino nitrogen. The findings are consistent with the presence in both blood and urine of a protein metabolite of high molecular weight.

F. H. L. TAYLOR
STANLEY M. LEVENSON
CHARLES S. DAVIDSON
MARGARET A. ADAMS
HARRIET MACDONALD

THORNDIKE MEMORIAL LABORATORY, 2ND AND 4TH MEDICAL SERVICES (HARVARD) AND THE BURNS COMMITTEE, BOSTON CITY HOSPITAL, AND DEPARTMENT OF MEDICINE, HARVARD MEDICAL SCHOOL, BOSTON, MASS.

The work described in this paper was done under a contract, recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and Harvard University.

[1] P. Duval, J.-Ch. Roux and Goiffon, *Presse Med.*, 42: 1785, 1934.

[2] O. Lambret, J. Driessens and H. Malatroy, *Compte Rend. Soc. de Biol.*, 123: 12, 1936.

## TYPES OF ARGENTINIAN PLANTS OF SPEGAZZINI

ALL taxonomists working intensively on the flora of South America must necessarily evaluate the many hundreds of species of all groups of vascular plants of Argentina described by the late Carlos Spegazzini (1858–1926). As further exploration of Argentina and adjacent countries brings to light additional species it becomes increasingly important to understand exactly what Spegazzini had as types of his species. This need is now being met through the far-seeing interest of the Department of Botany of the Museo de La Plata of the Universidad de La Plata. Professor Angel L. Cabrera, in charge of the Section of Phanerogams, is supplying five or six of the leading herbaria of the world a complete series of photographs of these types. The first series of 100 prints with detailed labels has just reached the Gray Herbarium. The glossy prints, $12 \times 17$ cm, are beautifully prepared. These and the series soon to follow will be invaluable to all students of South American plants.

M. L. FERNALD
HARVARD UNIVERSITY

## OPTICAL ILLUSIONS FROM TRAIN WINDOWS

IF one is riding forward rapidly in a train traversing prairie country with wide vistas, the landscape one passes seems to be a circle revolving counter-clockwise with the center at the horizon on a radius at right angles from the tangent on which the train seems to be moving.[1] If now the train stops, the movement of the illusory circle seems to reverse and move majesti-

[1] The circular motion described is observed from the right side of the train, and of course is reversed from the left.