

of illustrated lectures on "Botanical Rambles in the West," the subject of this lecture being "Our Southwestern Desert."

DR. THOMAS H. GLENN, formerly in charge of the pathologic and bacteriologic laboratories of the Northwestern University, Chicago, has been placed in charge of the clinical and Röntgen-ray laboratories now being installed at Fort Dodge.

PROFESSOR KR. BIRKELAND returned to Christiania in July after a sojourn of seven months in Africa, where he continued his researches on the zodiacal light. He will return in October and continue the observations for three years.

A COURSE of twelve lectures on the theory and practise of radio-telegraphy will be delivered by Professor J. A. Fleming at University College, London, on Wednesdays at 5 P.M., beginning on October 28.

DR. JAMES ELLIS GOW, professor of botany in Coe College, the author of contributions on the embryology and morphology of plants, has died at the age of thirty-seven years.

WE have to record somewhat late the death of Overton Westfield Price, at one time associate forester of the U. S. Forest Service, for the internal administration of which he was largely responsible during the term of office of Mr. Pinchot.

SIR JOHN BENJAMIN STONE, for many years a member of the British parliament, known to scientific men for his photographs of scientific places, objects and men, has died at the age of seventy-six years.

UNIVERSITY AND EDUCATIONAL NEWS

THE Medical School of Western Reserve University receives by the will of Liberty E. Holden a bequest said to be nearly one million dollars. The fund is to be known as the Albert Fairchild Holden Foundation, in memory of Mr. Holden's son.

DR. HERMON CAREY BUMPUS, business manager of the University of Wisconsin, formerly director of the American Museum of Natural History, has been elected president of Tufts College.

THE *Journal* of the American Medical Association states that Dr. Daniel A. K. Steele has been appointed senior dean and head of the department of surgery in the college of medicine of the University of Illinois; Dr. Charles Spencer Williamson, professor of medicine and head of the department; Dr. Charles Summer Bacon, professor of obstetrics and head of the department of obstetrics and gynecology; Dr. Julius Hays Hess, associate professor of pediatrics and head of the division of pediatrics; Dr. Norval Pierce, professor of otology; Dr. Joseph C. Beck, associate professor of laryngology and rhinology and head of the division; Dr. Oscar Eugene Nadeau, instructor in surgical pathology; Dr. A. O. Shoklee, associate professor of pharmacology; Dr. Roy L. Moodie, instructor in anatomy, and Dr. C. S. Smith, instructor in physiological chemistry.

PROFESSOR H. H. LANE, head of the department of zoology at the University of Oklahoma, has been granted a sabbatical leave of absence on half salary, to carry on research work at Princeton University. Dr. W. C. Allee, formerly instructor in zoology in Williams College, will be acting head of the department, to which he will be permanently attached as assistant professor.

EDWARD J. KUNZE, of the Michigan Agricultural College, has been appointed professor of mechanical engineering in charge of the department of mechanical engineering at the Oklahoma Agricultural and Mechanical College.

DR. ERNEST SACHS, associate in surgery at Washington University Medical School, St. Louis, Mo., has been appointed associate professor of surgery at the same institution.

F. L. PICKETT, sometime instructor in botany at Indiana University, and for the past year research fellow at the same institution, has been appointed associate professor of plant physiology at Washington State Agricultural College.

JAMES CLARENCE DE VOSS, M.A. (Colorado, '12), has been appointed professor of psychology and education in the Kansas State Normal School at Emporia.

DR. J. B. LEATHES, F.R.S., professor of pathological chemistry in the University of Toronto, has been offered the chair of physiology at the University of Sheffield rendered vacant by the acceptance of Professor J. S. Macdonald of the chair of physiology in the University of Liverpool.

DISCUSSION AND CORRESPONDENCE

RESEARCH ESTABLISHMENTS AND THE UNIVERSITIES

PRESIDENT WOODWARD's address¹ contains so much of concentrated wisdom on the subject of scientific research within and without universities that no American scientist should fail to read it carefully. The part which impresses me as especially timely deals with "research in academic circles." President Woodward does not discuss the question whether research is a desirable agency in the disciplining of untrained minds, but I understand this to be the theory on which most university instruction in science is now based. The so-called "inductive method" is simply the method of research. Our science courses aim only in a minor degree to impart information; their chief aim is frankly recognized to be training in methods of discovering truth. But is the training of students in *methods* of research itself *research*? This is a subsidiary question which President Woodward's words suggest and concerning which I think we are apt to deceive ourselves.

Our larger universities, and many of our smaller ones too, point with pride to the research work which they are accomplishing. But in not a few cases this work, if inspected carefully, is found to take final shape in dissertations for the doctorate, of doubtful value as contributions to knowledge, prepared primarily not because the author had something of value to record but because he had to record something in order to get the coveted degree.

The chief energies of many professors entirely competent as investigators are wholly absorbed in laboriously dragging candidates through the academic mill up to the final

examination for the doctorate. Their success as research professors and the standing of their universities as centers of research is commonly estimated in numbers of doctorates conferred. See the publications of graduate schools, departmental pamphlets, and even SCIENCE (Aug. 21, 1914) with its annual list of "Doctorates conferred by American Universities."

Now is this in any true sense *research*? To coach an ambitious but mediocre mind up to the point of making a fair showing for the doctorate is the more exhausting, the more mediocre the candidate. Whatever its educational value, it certainly has little value as research. Yet this makes up a considerable part of the "research" activity of our best universities. Great sums of money are devoted to it in the form of fellowships, scholarships, buildings for laboratories and laboratory equipment for the use of advanced students. A small part of this investment devoted to research by the professors themselves unhampered by a crowd of immature and incompetent students would doubtless be much more effective in advancing knowledge.

The attempt to combine teaching with research has another indirect but evil consequence. The periods which the professor can himself devote to research are intermittent and fragmentary. This affects disadvantageously the topics selected for investigation. They too must be minor and fragmentary. Great fundamental questions requiring long continued and uninterrupted investigation can not be attacked with any hope of success by one who has only an occasional day or a summer vacation to devote to research. The necessity, too, of hunting up thesis subjects for students, small enough in scope to be handled successfully by a beginner in a limited time and yet novel enough to make a showing of originality reacts unfavorably on the professor's own work. It loses both in breadth and depth. He who in the full maturity of his powers should be doing a day's work, runs errands for boys, holds their coats and carries water. Imagine what the "Origin of Species" would have been like had it been brought forward vicariously as a series of theses for the doctor's

¹ "The Needs of Research," SCIENCE, August 14, 1914.