found in sufficient quantity to promise commercial value. The latest report that has come to the Geological Survey relates to a deposit in Arizona. One important domestic source of combined nitrogen is the gas works and by-product coke ovens, which in 1912 reported a recovery of ammoniacal liquor, ammonia and ammonium sulphate valued at $9,519,268. This output of by-product ammonium sulphate increased in 10 years from 17,643,507 pounds to 99,070,777 pounds, and as it is linked with the great coking industry further increases can be expected. Another domestic supply of nitrogen compounds lies in the fixation of atmospheric nitrogen by electricity. Cheap hydroelectric development is necessary to establish this industry, which would make our large agricultural and industrial interests free from the uncertainties of the foreign supply. It is hoped that the water-power legislation now before the United States Senate may promote hydroelectric development in large units and thus utilize some of the great water powers in the West in obtaining nitrogen from the air.

---

*UNIVERSITY AND EDUCATIONAL NEWS*

BAKER UNIVERSITY, Baldwin, Kan., has completed its $500,000 endowment fund, of which the general education board of New York gave $50,000. The rest was contributed by 10,000 persons, the largest gift from any one of them being $25,000. The people of Baldwin, a town of 1,200 population, gave $45,000.

ON October 14, Central College, Fayette, Mo., completed a campaign to increase the productive endowment of the college by $300,000. Of this amount the general educational board contributes $75,000. This fund increases the endowment of Central College to $500,000. The campus, buildings and equipment are valued at $300,000.

ON October 9 exercises in connection with the laying of the corner stone of the new chemical laboratory at the University of Illinois were held. Addresses were given by Professor William A. Noyes, director of the chemical laboratory and by William Hoskins of Chicago. The exercises were presided over by the Hon. W. L. Abbott, president of the board of trustees and President Edmund J. James laid the corner stone. The entire laboratory when completed will be 231 feet long, 202 feet wide and will contain 164,288 square feet of usable space.

AN addition is being built to the chemistry building of the University of California, costing, with its equipment, $40,000. It will provide laboratory accommodation for 250 students.

THE uncompleted University Hall of Columbia University, which contains the power house, the gymnasium and the commons, was seriously injured by fire on the night of October 9.

A HISTORY of the University of Colorado is being compiled by Professor James F. Willard and his assistants. It will probably be published within a year.

THE medical school of the University of Pennsylvania admits women this year for the first time to the regular course.

THE registration at Harvard University, with the figures for the last year given in parentheses, is as follows: Out of course, 50; seniors (361), 425; juniors (487), 581; sophomores (741), 575; freshmen (622), 704; special (19), 12; unclassified (97), 115; totals (2,327), 2,462; Graduate School of Applied Science (114), 111; Graduate School of Arts and Sciences (426), 467; Graduate School of Business Administration (104), 142; Divinity School (45), 42; Law School (647), 668; Medical School (290), 325; Dental School (185), 190; grand totals (4,138), 4,407.

THE following changes have been made in the faculty of the Case School of Applied Sciences: Professor R. H. Danforth, who has been professor of mechanical engineering at the United States Naval Academy, professor of mechanics and hydraulics; Mr. R. O. Jackson, graduate of the University of Maine and for some time engaged in practical engineering work, instructor in mechanical engineering; Mr. B. C. Boer, instructor in descrip-

tive geometry in Iowa State University, instructor in drawing and descriptive geometry; Mr. M. G. Edwards, graduate student in the University of Wisconsin, instructor in geology and mineralogy; Mr. T. D. Bains, Jr., a practical mining operator in California, instructor in mining engineering. The salaries of the full professors in Case School of Applied Science have been raised to $3,500.

PROFESSOR PERRY B. PERKINS has been called to the chair of mechanics at Brown University.

DR. M. O. TRIPP has been appointed professor of mathematics at Olivet College.

DR. JOHN B. LEATHES, professor of pathological chemistry in the University of Toronto, leaves Toronto in December for Sheffield, England, where he has been appointed professor of physiology in the University of Sheffield.

DR. A. W. STEWART, lecturer in organic chemistry in the Queen's University of Belfast, and formerly lecturer in stereochemistry at the University College, London, has been appointed lecturer in physical chemistry at the University of Glasgow, in succession to Professor Soddy, now of Aberdeen.

DR. D. WATERSTON, professor of anatomy in King's College, London, has been appointed to succeed Professor J. Musgrove as Bute professor of anatomy in the University of St. Andrews.

## *DISCUSSION AND CORRESPONDENCE*

### DR. BATESON'S PRESIDENTIAL ADDRESS

TO THE EDITOR OF SCIENCE: If a more extraordinary example of the inverted pyramid in reasoning than is comprised in the two Australian addresses by Bateson, lately published in SCIENCE, has ever been offered to a scientific audience I have never seen it. Offered as these were chiefly to a lay audience they are incomprehensible as coming from a man who has reached the presidency of the British Association.

We may admit the value of the Mendelian discovery in its relation to low and relatively simple organisms like plants, and also that in higher organisms Mendelian effects can sometimes be traced, but that unbridled hypothesis should be permitted to cover our colossal ignorance is not what we expect from such a source. When the observed facts flatly contradict a hypothesis a truly scientific expositor says "I can not account for it," and does not cover up (to the lay mind) his ignorance by the phrase of "an inhibiting factor." What is an "inhibiting factor?" Nobody knows. When the Mendelian law proves to fail utterly, as in the notorious case of the mulatto, the assumption of "excessive segregation" means nothing but "I do not know."

Any case can be "proved," by such methods but they are not scientific.

When a train is not on time it is doubtless due to "an inhibiting factor," but that explanation will hardly satisfy an impatient man who is anxious to be off, nor a railway manager seeking efficiency in his railway work.

If we assume the origin of life in a simple ameboid organism, without a soma, and the development of a rudimentary soma through natural selection, as a protection against the direct impact of the environment; and then the gradual complexity of the somatic envelope until it reaches its present grade in the higher vertebrates, what is the relation of the "germ-plasm" to the soma?

We may tolerate the theory of the continuity of the germ-plasm because it seems to fit the known facts. If it had never acquired a somatic envelope there would be nothing but ameboid organisms to this day. But to what does the germ-plasm as carried by the present generation of animal life owe its existence? Its potentiality of cell-division depends for continuity upon the nutrition furnished by the soma. Is it creditable that in hundreds of millions of evolving generations the constantly renewed germ-plasm should remain unmodified and that in an ameba there should exist unawakened the factors for hair, teeth, bones and hoofs? The idea seems to the writer preposterous. If the plasma has not changed its characters and potentialities since the ameboid epoch, why should there be anything now but amebas? If through the slow