and Ichneumon flies, by H. L. Vierick, of the Bureau of Entomology, U. S. Department of Agriculture. In this paper Mr. Vierick describes twenty-one new genera and fifty-seven new species of Ichneumon flies, one new genus of which is named after Dr. Marcus Benjamin, editor of the publications of the U. S. National Museum.

UNIVERSITY AND EDUCATIONAL NEWS

MR. T. JEFFERSON COOLIDGE has given $50,000 for the construction of one of the buildings for the Chemical Laboratory of Harvard University.

IT is announced that the Graduate School buildings of Princeton University, now in the course of erection, will in all probability be formally opened in June, 1913, instead of the following September, as originally planned.

THE original purpose of American colleges was mainly to train men for the ministry, but at present Harvard gives to this profession barely 2 per cent. of its graduates; Yale now contributes 3 per cent. This and other changes in the professions favored by college graduates are described in a bulletin by Bailey B. Burritt on "Professional Distribution of University and College Graduates," just issued by the United States Bureau of Education. The decline in the numbers going into the ministry has been accompanied by a rise in the professions of teaching, law and business. All three have been more or less consistent gainers at the expense of the ministry. At Harvard the ministry yielded the leadership to law after the revolutionary war, and law remained the dominant profession of Harvard graduates until 1880, when business took the lead. At Yale the ministry competed successfully with law until after the middle of the nineteenth century, when law took the ascendency and kept it until 1895, being then displaced by business. At the University of Pennsylvania one fourth of the graduates used to go into the ministry; now about one fiftieth do so. Oberlin College, founded with strong denominational tendencies, shows the same story of the decline in numbers of men going into the ministry. At the University of Michigan, out of over 15,000 graduates, only 188 have become ministers. Aside from their contributions to the clergy, most of the universities and colleges have had favorite professions. At Columbia, Dartmouth and Michigan, for instance, it is law; at Pennsylvania it is medicine; at Oberlin, Wisconsin, and many others, particularly the co-educational institutions, it is teaching. A final summary of 37 representative colleges shows that teaching is now the dominant profession of college graduates, with 25 per cent.; business takes 20 per cent.; law, which took one third of all the graduates at the beginning of the nineteenth century, now claims but 15 per cent.; medicine takes between 6 and 7 per cent. and seems to be slightly on the decline; engineering is slowly going up, but still takes only 3 or 4 per cent.; while the ministry takes 5 or 6 per cent.

WITH the appointment of Frank B. Moody, assistant state forester of the Wisconsin forest service, the University of Wisconsin has taken the first steps toward the formation of a course in forestry. Mr. Moody is a graduate of Bates College, Maine, and of the forestry school of the University of Michigan. Mr. Moody's main work will be to organize a school for forest rangers and to give the courses on woodlot management in the university. The forest rangers' course will consist of two sessions of six months each extending over a period of two years. One half of each session will be spent at the university during the fall and winter, the other half in the field during the spring and summer, where instruction will be given by direct practical work on the state forest lands. It is expected the new course will be ready for students by January first, 1913.

AMONG promotions in the faculty of Oberlin College is that of Dr. George David Hubbard, to be professor of geology on permanent appointment and head of the department. Among the new appointments the most important is that of Dr. Alan W. C. Menzies as permanent head of the department of chem-

istry, to succeed Professor Frank Fanning Jewett, who retires on the Carnegie Foundation after thirty-two years of service. Dr. Menzies is an alumnus of the University of Edinburgh and has been a graduate student in Leipzig, Aberdeen and in the University of Chicago. Among European appointments Dr. Menzies was assistant professor of chemistry in Heriot-Watt College, Edinburgh, in 1898–1901, and professor of chemistry in St. Mungo College, Glasgow, from 1902 to 1908. He was research fellow in the Davy-Faraday Laboratory, London, in 1901. He is a member of the American Chemical Society, the London Chemical Society and fellow of the Royal Society of Edinburgh. Although retired, Professor Jewett will have a laboratory room in the chemistry building, and plans to give the college service in some much needed work on its mineralogical collections.

Edith M. Twiss, Ph.D. (Chicago), has been appointed head of the department of botany, Washburn College, to succeed Dr. Ira D. Cardiff. James P. Poole, B.G. (University of Maine), has been appointed instructor in the department.

Dr. Harry Beal Torrey, formerly associate professor of zoology in the University of California, has assumed the duties of professor of biology in Reed College, Portland, Oregon.

A. B. McDaniel, of the University of South Dakota, has been appointed assistant professor of civil engineering at the University of Illinois.

DISCUSSION AND CORRESPONDENCE

DRIESCH'S VITALISM AND EXPERIMENTAL INDETERMINISM

In Science of June 16, 1911, I tried to point out the relation of perhaps the most widely known and most influential brand of vitalism —that of Driesch—to experimentation. I set forth that Driesch's vitalism results in "experimental indeterminism," such that "you can not make a statement *which will hold,* that a given arrangement of physical components will act in a certain definite way (even after you have observed how it acts)," because with the same physical configuration different entelechies, or the same entelechy in different manifestations, may be at work, determining diverse results in different cases. Thus I held that it nullifies the fundamental postulate of experimental work, that "when two cases differ in any respect there will always be found a preceding difference to which the present difference is (experimentally) due." I tried to show what a radical difference this would make between biology and other parts of science, in respect to the theory and practise of scientific work, holding it equivalent to an "admission that the principle on which experimental investigation is based breaks down when applied to biology."

In a following number of Science (July 21, 1911) Lovejoy takes sharp issue with my exposition of Driesch's vitalism, saying:

> A closer scrutiny of the doctrine's implications will, I think, disclose in it no such anarchical propensities (p. 78). I think Jennings misconceives Driesch's position in ascribing to him a wholesale "experimental indeterminism" (p. 78).

And after an exposition of Driesch's argument as he conceives it:

> There need in this be nothing arbitrary, nothing to baffle the purposes of the experimenter (p. 78). In all this argument for the non-mechanical nature of organic phenomena there is nothing whatever that necessarily "exempts from experimental determinism . . . that immense field of developmental processes which lies between the egg and the adult," or that necessarily nullifies the experimentalist's postulate that "when two cases differ in any respect there will always be found a preceding difference to which the present difference is (experimentally) due" (p. 80).[1]

And in the classifications of the kinds of vitalism given by Lovejoy in earlier papers (Science, November 26, 1909; and April 21, 1911), he does not so much as mention as one of the possible kinds a vitalism which distinguishes the organic from the inorganic in

[1] What Lovejoy gives here is in reality an exposition of the conclusions which he himself might draw from Driesch's data—assuming these to be the conclusions which Driesch draws.