useful feature of the list is the citation in every case of the time and place of publication, and the name of the publisher.

MONTANA BOTANY.

WITHIN the past few months Professor Blankinship has published numbers 1, 2 and 3 of the 'Montana Agricultural College Science Studies,' including three botanical papers of much more than usual interest. The first of these, 'A Century of Botanical Exploration in Montana,' includes a chronological list of seventy-four collectors who have worked in the state, beginning with Meriwether Lewis, of the Lewis and Clarke expedition in 1805 and 1806, and ending with Millie M. Smith and Arthur Lehman in 1904. The bibliography includes eighty-three titles.

The second paper is a 'Supplement to the Flora of Montana,' and includes additional species, and corrections of the list given in Dr. P. A. Rydberg's 'Catalogue of the Flora of Montana and the Yellowstone National Park' (Memoirs N. Y. Bot. Gard., 1900). There are about three hundred and eighty-six additions, seventy-eight corrections and twenty-eight new species and varieties. Apparently the author has been conservative in his treatment of both old and new species, and apparently the corrections have been made with care. This list is a valuable and notable addition to our knowledge of Montana flowering plants, and must prove very helpful when the descriptive botany of the region comes to be written.

The third paper consists of lists of the common names of Montana plants. Every plant is entered twice, once alphabetically under its common name, and again in a similar list in which the scientific names are arranged alphabetically. It is a valuable contribution to the botany of common names, and serves very well to show how variable and unreliable such names are. CHARLES E. BESSEY.

THE UNIVERSITY OF NEBRASKA.

THE MAGNETIC SURVEY OF THE PACIFIC OCEAN: SECOND CRUISE.

THE Yacht *Galilee,* engaged in the magnetic survey of the Pacific Ocean under the auspices of the Carnegie Institution of Washington, left San Diego, California, on March 2, to enter upon her second cruise. She is expected to make the following circuit of about 20,000 miles by the end of this year: San Diego, Fanning Islands, Samoan Islands, Fiji Islands, Marshall Islands, Guam, Yokohama, Aleutian Islands and back again to San Diego.

It was necessary to reorganize the scientific personnel as those of the former staff belonging to the U. S. Coast and Geodetic Survey were obliged to return to their official duties at the expiration of their furloughs. The command of the vessel has accordingly now been entrusted to Mr. W. J. Peters, formerly of the astronomical and topographical corps of the U. S. Geological Survey. He has had considerable experience in difficult geographical work, was second in command and in charge of the scientific work of the recent Ziegler Polar Expedition as the representative of the National Geographic Society.

In connection with the latter expedition, Mr. Peters made a valuable series of magnetic, meteorological and tidal observations at Teplitz Bay, Franz Joseph Land.

The other members of the present staff are: Mr. J. P. Ault, magnetic observer (likewise a member of the former staff), Mr. J. C. Pearson, magnetic observer (formerly instructor of physics at Bowdoin College) and Dr. H. E. Martyn, surgeon and recorder. The sailing master is Captain J. T. Hayes. While the vessel was at San Diego some additional changes and improvements were made both in the ship and in the instruments employed. Sufficient funds have been allotted so as to permit carrying on this work continuously throughout the year. L. A. BAUER.

DEPARTMENT TERRESTRIAL MAGNETISM,
March 10, 1906.

UNIVERSITY CONTROL.

IN the colleges from which our universities have developed the problem of administration was comparatively simple. The faculty and the president met weekly and consulted daily; each was familiar with the work of the entire

institution; a spirit of cooperation and loyalty naturally prevailed. The trustees also understood the economy of the college and were able to work intelligently for the general good. But when a university covers the whole field of human knowledge, when it is concerned with professional work in divergent directions, when it adds research and creative scholarship to instruction, when both men and women are admitted, when there are 500 instructors and 5,000 students, it is no longer possible for each trustee and for each professor to share intelligently in the conduct of the whole institution. We appear at present to be between the Scylla of presidential autocracy and the Charybdis of faculty and trustee incompetence. The more incompetent the faculties become, the greater is the need for executive autocracy, and the greater the autocracy of the president, the more incompetent do the faculties become. Under these conditions it appears that the university must be completely reorganized on a representative basis. It should not be a despotism and it can not be a simple democracy. Autonomy should be given to the schools, departments or divisions. The administrative, legislative and judicial work must be done by experts, but they should represent those whom they serve.

In the course of the past few months there have appeared in various quarters articles discussing the problems of university and educational administration. Two of these contributions—one by Ex-president Draper in *The Atlantic Monthly* and one by President Andrews in the *Educational Review*—laud the university president and his office, but the other articles which have come to my attention are criticisms of the absolutism and commercialism that are alleged to obtain in university control. Editorial discussion from this point of view has appeared in *The Nation, The Outlook, The Dial, The Congregationalist* and other journals. Articles by President Pritchett in *The Atlantic Monthly,* by Professor Stevenson in *The Popular Science Monthly,* by Mr. Munroe in SCIENCE and by the present writer in *The Independent* adopt a similar attitude.

The articles referred to are in the main attacks on the transference to university administration of methods current in business and in politics. Several suggestions of a constructive character have, however, been made. Thus Professor Stevenson proposes that the presidency as it now exists should be abolished and that the faculty should make all appointments to the teaching staff, and Dr. Pritchett and Mr. Munroe suggest a joint council or committee of trustees and faculty.

The present writer ventures to propose tentatively the following form of organization for our larger universities, to be reached as the result of a gradual evolution:

1. There should be a corporation consisting of the professors and other officers of the university, the alumni who maintain their interest in the institution and members of the community who ally themselves with it. In the case of the state universities part of the corporation would be elected by the people. This corporation should elect trustees having the ordinary functions of trustees—the care of the property and the representation of the common sense of the corporation and of the community in university policy. The trustees should elect a chancellor and a treasurer who would represent the university in its relations with the community.

2. The professors or officers, or their representatives, should elect a president who has expert knowledge of education and of university administration. His salary should not be larger, his position more dignified or his powers greater than those of the professor.

3. The unit of organization within the university should be the school, division or department, a group of men having common objects and interests, who can meet frequently and see each other daily. It should be large enough to meet for deliberation and to represent diverse points of view, but small enough for each to understand the whole and to feel responsible for it. The size of this group is prescribed by a psychological constant, its efficient maximum being about twenty men and its minimum about ten.

4. Each school, division or department should elect its dean or chairman and its executive committee, and have as complete

autonomy as is consistent with the welfare of the university as a whole. It should elect its minor officers and nominate its professors. The nominations for professorships should be subject to the approval of a board of advisers constituted for each department, consisting, say, of two members of the department, two experts in the subject outside the university and two professors from related departments. The final election should be by a university senate, subject to the veto of the trustees. The same salaries should be paid for the same office and the same amount of work. The election should be for life, except in the case of impeachment after trial. The division should have financial as well as educational autonomy. Its income should be held as a trust fund and it should be encouraged to increase this fund.

5. The departments or divisions should elect representatives for such committees as are needed when they have common interests, and to a senate which should legislate for the university as a whole and be a body coordinate with the trustees. It should have an executive committee which would meet with a similar committee of the trustees. There should also on special occasions be plenums of divisions having interests in common and plenums of all the professors or officers of the university. There should be as much flexibility and as complete anarchy throughout the university as is consistent with unity and order.

J. MCKEEN CATTELL.

SCIENTIFIC NOTES AND NEWS.

FATHER J. G. HAGEN, S.J., professor of astronomy in Georgetown University, and director of the observatory, has been offered the directorship of the Vatican Observatory.

MR. ARTHUR STANLEY EDDINGTON, B.A., B.Sc. (Manchester), of Trinity College, Cambridge, senior wrangler in 1904, has been appointed chief assistant in the Royal Observatory, Greenwich.

DR. PAUL G. WOOLLEY, director of the serum laboratory of the Bureau of Science in the Philippines, has accepted under the government of Siam the directorship of the pathological laboratory, which it is proposed to start as soon as Dr. Woolley can reach Bangkok.

PROFESSOR JAMES MILLS PEIRCE, Perkins professor of mathematics and astronomy at Harvard University, has presented his resignation to take effect a year hence. Professor Peirce was appointed tutor in mathematics at Harvard in 1854.

PROFESSOR C. W. PRITCHETT has retired at the age of eighty-three, after thirty years' service, from the directorship of the Morrison Observatory at Glasgow, Missouri. He is succeeded by Mr. H. R. Morgan, formerly of the U. S. Naval Observatory.

DR. WILLIAM OSLER, regius professor of medicine at Oxford University, has been elected a member of the Athenæum Club, under the provisions which empower the annual election of nine persons 'of distinguished eminence in science, literature, the arts, or for public services.'

PROFESSOR PERCY F. FRANKLAND was elected president of the Institute of Chemistry of Great Britain and Ireland at the twenty-eighth annual meeting held on March 1. Professor Frankland's father, Sir Edward Frankland, was the first president of the institute.

DR. HUGO DE VRIES, professor of botany at Amsterdam, will present a paper on 'Elementary Species in Agriculture,' at the meeting of the American Philosophical Society, on April 18.

DR. E. D. FISHER has been appointed chairman of the committee on the centennial celebration of the Medical Society of the County of New York, which will be held at the Hotel Astor on April 4.

MR. DUDLEY MOULTON, A.B. (Stanford, '04), has been appointed a field agent of the Division of Entomology, U. S. Department of Agriculture.

DR. W. C. FARABEE, instructor in anthropology at Harvard University, took a party of Harvard students to Iceland during the summer. Mr. V. Stefánsson, Hemenway fellow in anthropology, and Mr. J. W. Hastings