

portant results of the work carried on by and stimulated by DeVries will be to show another way in which partial segregation may be secured, and the theory of natural selection needs all the help it can get from segregation.

It should hardly be necessary to urge that, in understanding the development of the conditions which prevail to-day among organisms, the problem of the origin of species seems of very secondary importance in comparison with the problem of the perfection of adaptation.

MAYNARD M. METCALF.

THE WOMAN'S COLLEGE OF BALTIMORE.

WILBUR WRIGHT'S SUCCESSFUL FLIGHT IN A
MOTOR-DRIVEN AEROPLANE.

THE newspapers of December 18 contained the announcement that Wilbur Wright had flown a distance of three miles with an aeroplane propelled by a 16-horse power, four-cylinder, gasoline motor, the whole weighing more than 700 pounds. To the average newspaper reader this meant no more than similar statements previously made in the newspapers that men had flown in New York, or St. Louis, or San Francisco. But to the student of aeronautics, and particularly to those who had followed the careful scientific experiments with aeroplanes which were being made by Orville and Wilbur Wright, it meant an epoch in the progress of invention and achievement, perhaps as great as that when Stevenson first drove a locomotive along a railroad.

It meant that after ages of endeavor man had at last been able to support himself in the air as does a bird and to land in safety at a spot chosen in advance.

The report from an authoritative source confirms the fact of this flight, but modifies the details somewhat from those given in the newspapers. It appears that four successful flights were made in a motor-driven aeroplane on December 17 near Kitty Hawk, N. C. The wind was blowing about 21 miles an hour and a speed relative to the wind of 31 miles an hour was attained by the aeroplane. This meant a speed of 10 miles an hour relative to the ground. The aeroplane had a surface of 510 square feet and in the longest flight was in the air 57 seconds. The aeroplane

is said to have risen from a level. The reported distance of three miles was probably relative to the wind.

The earlier work of the Wright brothers is described in the reports of the Western Society of Engineers and in part republished in the Annual Report of the Smithsonian Institution for 1902. Their invention of a forward rudder has contributed to the final success.

The modern success in aeronautics may be said, I think, to date from the feat of Otto Lilienthal in 1891 in gliding down an incline in an aeroplane. These glides were repeated with much success and with an improvised aeroplane by Mr. Chanute and Mr. Herring in our own country. Mr. Herring even went so far as to carry with him 50 pounds of sand in his aeroplane which weight he computed would be that of an engine sufficient to support him.

Mr. Pilcher, in England, repeated these experiments on a level by rising into the air in his machine when drawn by a horse attached to a rope, the machine rising like a kite and then gliding forward. Mr. Whitehead is described in the *Scientific American* as having repeated this experiment recently in Connecticut with a motor on board the aeroplane.

In the meantime, in 1896, Dr. Langley had driven a model weighing about 25 pounds through the air with a small steam-engine, and Sir Hiram Maxim had performed the wonderful feat of lifting 7,000 pounds into the air for a moment. This was done with an aeroplane having 5,000 square feet of surface driven by serial screws attached to a steam-engine of 360 horse-power and of extraordinary lightness.

But, notwithstanding all these partial successes, there was, owing to the recently reported failure of Dr. Langley to lift a man and to other causes, a wide skepticism as to the possibility of human flight.

Mr. Wright's success in rising and landing safely with a motor-driven aeroplane is a crowning achievement showing the possibility of human flight. Much yet remains to be done, but with the stimulus of this beginning progress will probably be rapid. In the progress now achieved a great deal is due to Mr.

Octave Chanute, an eminent American engineer, whose enthusiasm and great knowledge have stimulated the work of Herring, Hufaker, the Wrights and many others, and whose advice and supervision was freely given in perfecting the machine which has finally succeeded.

H. H. CLAYTON.

THE EDITORIAL COMMITTEE OF SCIENCE.

AT the recent meeting of the American Association for the Advancement of Science, the council resolved to add the vice-presidents of the association and the permanent secretary to the editorial committee of SCIENCE. The vice-presidents of the association, each of whom is chairman of one of the ten sections, represent the sciences covered by the journal, and are always among the most efficient and active men of science of the country. Their cooperation during their term of office will greatly promote the interests of the association and of the journal. We also hope to secure the cooperation of several other men of science in order that all branches of science and all parts of the country may be adequately represented. The members of the committee who have had control of the journal during the nine years of the new series will of course remain as heretofore. SCIENCE is now so well established as the representative organ of American men of science that it seems unnecessary to print each week the names of the editorial committee and of the responsible editor.

SCIENTIFIC NOTES AND NEWS.

WE hope to publish next week the official report of the St. Louis meeting of the American Association for the Advancement of Science, and as soon as possible the reports of the societies meeting in affiliation with it and of the other societies that met during convocation week at Philadelphia and elsewhere. Professor Farlow, of Harvard University, the eminent botanist, was elected president of the association, and vice-presidents were elected as follows: Professor Alexander Ziwet, of the University of Michigan, Section of Mathe-

matics and Astronomy; Professor W. F. Magie, Princeton University, Section of Physics; Professor C. P. Kinnicutt, Worcester Polytechnic Institute, Section of Chemistry; Professor D. S. Jacobus, Stevens Institute of Technology, Section of Mechanical Science and Engineering; Professor E. A. Smith, University of Alabama, Section of Geology and Geography; Dr. C. Hart Merriam, U. S. Biological Survey, Section of Zoology; Professor B. L. Robinson, Harvard University, Section of Botany; Dr. Walter Hough, U. S. National Museum, Section of Anthropology; Martin A. Knapp, Interstate Commission of Commerce, Section of Social and Economic Science. President C. S. Howe, Case School of Applied Science, was elected secretary of the council, and Professor C. A. Waldo, Purdue University, general secretary. The association will meet next year at Philadelphia and the following year at New Orleans.

THE American Society of Naturalists at the annual meeting in St. Louis last week elected officers as follows: *President*, E. L. Mark, Harvard University; *vice-president for the Eastern Section*, Franklin P. Mall, the Johns Hopkins University; *vice-president for the Central Section*, John M. Coulter, of the University of Chicago; *secretary*, Chas. B. Davenport, University of Chicago; *treasurer*, Hermann von Schrenk, Missouri Botanical Garden and the Bureau of Forestry; *additional members of the executive committee*, Professor J. McKeen Cattell, Columbia University, and Professor William Trelease, Missouri Botanical Garden. The program of the Naturalists at St. Louis was similar to that of recent years. On Tuesday evening President David Starr Jordan, Stanford University, gave an illustrated lecture on 'The Resources of the Sea,' which was followed by a smoker at the University Club. On Wednesday afternoon the annual discussion was held, the subject being 'What kind of degrees should be conferred for scientific work?' the opening speakers being President Jordan, President Van Hise, Professor Cattell and Professor Coulter. The annual dinner was held on Tuesday evening at the Mercantile Club, and was followed by the address of the presi-