North America as indicated, have been under way for several years, have been visited by perhaps a dozen zoologists interested in problems of heredity as well as by a large number of botanists. When the major purpose of the cultures shall have been accomplished it will be possible to publish the account of the whole to some advantage.

In re hybrids I venture to suggest that if I were a 'Mendelist' of the strictest sect I would welcome a challenge to bring the oak and walnut hybrids under the chess-board diagrams for the exposition of the possible combinations. The unflinching advocates of the Mendelian formulæ are confronted with much more serious difficulties than the examples in question. The enormous accretions being made in the range of authenticated facts of inheritance in hybridization have thrown the whole subject into a state of flux and not for a long time may we hope to work under such simple generalizations as those which contented us a decade since.

It is not intended to maintain that the horse has climbed up on his tiptoes, the bacterium settled into its highly specialized medium and that the orchids have come by their intricate flower-mechanism by the same process. Selection undoubtedly plays an important part, although we seem unable to agree upon the manner in which it operates. One can not be a field student of plants to any great extent without coming upon striking facts in segregation and isolation. This is found especially in the studies now being made of the distribution of the components of the flora of the Bahamas and West Indies. Until we see further around the bend of the road, however, we may make but futile guesses as to the direction of the straight-away beyond. The great amount of energy now being put on detailed studies in this subject at the Desert Laboratory and elsewhere is yielding a great range of diverse data, and affords the hope that some definite conclusions may be expected, within a time comparatively brief, when contrasted with the long barren period in which nothing of definite value as evidence in evolutionary problems has been produced.

In this and other phases of the subject we are confronted with the necessity of placing ourselves alongside some of the organisms which share the earth with us, in order to follow with them along their devious trails for what distance we may, and thus gain some clue as to the rate, direction and character of their movements.

D. T. MACDOUGAL.
DEPARTMENT OF BOTANICAL RESEARCH,
CARNEGIE INSTITUTION OF WASHINGTON,
October 8, 1906.

THE PUBLIC HEALTH DEFENCE LEAGUE.

TO THE EDITOR OF SCIENCE: With the object of devising ways and means for the preservation of the public health and morals there was held in New York City on November 15, an important conference, which should be of interest to readers of SCIENCE. Several hundred delegates from over a hundred well-known organizations then gathered in the Hudson Theater and launched the Public Health Defence League. The inclement weather without did not in any way dampen the enthusiasm of those who were enlisting themselves in a fight to down quackery in any of its various forms and to enforce existing laws for the securing of pure food and drugs, for the suppression of the criminal abortionist, and for other lines of work of a similar nature.

The conference committee consisted of: Dr. Wendell C. Philips, Silas F. Hallock, Dr. Floyd M. Crandall, Dr. Henry W. Cattell, Walter F. C. Tichborne, Albert M. Austin, Dr. Walter Lester Carr, Mr. Howard J. Rogers, Dr. Ernest J. Lederle, Mr. J. M. Rice, Harold P. Brown, Dr. Henry S. Stearns, Livingston Farrand, Rev. J. J. Wynne, Dr. William M. Polk, O. E. Edwards, Gaylor S. White, Dr. Frank Van Fleet, Eugene O'Dunne, Rev. Thomas R. Slicer, Dr. Thomas Darlington, Austen G. Fox, Dr. William L. Browning, Robert E. Belcher, John S. Cooper and Champe S. Andrews, much credit being due to the latter gentleman for his work in organizing the meeting.

Mr. Austen G. Fox, who did such good work as attorney for the committee of fifteen some years ago in regard to the social evil, presided at the meeting. The delegates were welcomed by President McGowan, of the Board of Alder-

men, the first speaker being Mr. Charles F. Stewart, a reporter on the *Cleveland News*. He most entertainingly described how, after a thorough physical examination had shown him to be in good health, the various quacks and charlatans in Cleveland, one of whom was able to expend $80,000 a year for postage stamps alone, pronounced him suffering from various diseases of an unmentionable nature. Among the other speakers were Mr. Eugene O'Dunne, of Baltimore; Mr. Thomas W. Barlow, of Philadelphia, and Mr. Anthony Comstock, of New York.

It seems as if politics can not be run without a boss or the laws upon our statute books be properly enforced without special societies for this purpose. The success of such a movement started from without the medical profession, but with every aid extended to it by physicians, will be even more marked than if it had been undertaken under the auspices of such an organization as the American Medical Association. The chief difficulty to cope with will be to formulate a working plan so that the various branches will be able to cooperate most efficiently with the parent chapter. As was pointed out in the remarks of Dr. Charles A. L. Reed, of Cincinnati, one of the first things to do is to make the laws of our different states bearing upon public health and morals uniform. Thus it would be advisable to have the present United States pure food and drug law passed by the legislature of each state, and to frame a law making it a penal offence to offer to perform a criminal operation and to revoke the license of any physician who upon due process of law has been convicted and sentenced for the performance of such illegal act. To prosecute work of this character and the sanitation of to-day there should be created a national department of health with its head a member of the Cabinet, as so ably advocated by Professor Norton, of Yale. H. W.

SPECIAL ARTICLES.

A STATISTICAL STUDY OF AMERICAN MEN OF SCIENCE. III.

THE DISTRIBUTION OF AMERICAN MEN OF SCIENCE.

From a conventional point of view the distribution of men of science would not be regarded as a psychological problem, perhaps not even as a scientific problem. But in recent years the distribution of plants and animals has received increasing attention in botany and zoology, and apart from its pertinence as a correct description of the world in which we live, it has proved, on the one hand, to have certain practical applications, and, on the other hand, to throw light on certain general problems of heredity and evolution. Similar results may accrue from a scientific study of the distribution of human ability and performance.

The birthplace and the present residence of the thousand leading men of science of the United States are shown on the accompanying table, the divisions used being those of the census. Figures are given separately for the five hundred (I.–V.) who are more distinguished and for the five hundred (VI.–X.) whose reputations are less, followed by the totals and their number per million of the population. As the average age of the scientific men is about 45 years, their birth rate is referred to the census of 1860.[1] Thus the first line of the table shows that 29 of the 1,000 scientific men were born in Maine, and four now reside there. Of the 29 scientific men born in the state, 19 are among the 500 who are more eminent and 10 among the 500 who are less eminent. The number born was at the rate of 46.1 per million of the population at the approximate time of their birth, or one for each 22,000. The scientific population of the state is now only at the rate of 5.7 per million of the population, or scarcely more than one for each 200,000.

There are striking variations in the origin and in the present residence of scientific men throughout the United States. Massachusetts and Boston have been the intellectual center of the country. The birth rate of these leading men of science is in Massachusetts 108.8 per million population; it is 86.9 in Connecticut,

[1] This is not exact, as the age distribution is not symmetrical, and the rate of increase of the population in the different states is not uniform, but the results are as nearly correct as is necessary.