tology, genetics or biochemistry, consistently supports the evolutionary doctrine, and that otherwise the whole edifice of biological science is without meaning and valueless.

*Eighth,* That in his opinion man's bodily structure, physiological processes, mental faculties, embryological development, and division into numerous races and subraces, all point unmistakably to a human origin out of lower forms of animal life.

*Ninth,* That the whole trend of the doctrine of evolution when fairly stated is to establish the ideas:

(1) That *God* is everywhere present, and at work in his creation now, as well as in the past.

(2) That He is working according to a well-defined *plan* discernible in the phenomena of nature.

(3) That in this plan, *man* is the crowning product of creation.

(4) That the evolutionary doctrine as applied to man and human affairs, is ennobling, uplifting and productive of optimism as to man's future.

(5) That there is nothing in the evolutionary doctrine when fairly considered that in any way conflicts with true religion or a fair interpretation of the Bible.

(6) That the account of creation, in the first chapter of Genesis, leaves untouched the *method* of creation, and allows for an evolutionary process as clearly as such a brief account could do when its real purpose is kept in mind.

(7) That the scientific doctrine of evolution is in *no sense* atheistic or materialistic, but strongly supports the theistic and idealistic philosophy of the universe.

(8) That the doctrine of evolution leaves the truths of Christianity exactly where they have aways been, *i.e.,* free to stand or fall on the basis of their own intrinsic evidence and the experience of Christiandom.

(Signed) Henry Higgins Lane

Subscribed and sworn to this 1st day of July, A.D., 1925.

Professor Osborn also hurried through the press of Scribner's for wide distribution in the state of Tennessee especially his small volume, "The Earth Speaks to Bryan," a collection of religious and scientific essays written especially to meet the point of view of the Fundamentalists. Mr. Bryan has made continued and effective use of W. A. Bateson's Toronto address of December, 1921, from the time of its appearance in print to his recent article in the July *Forum.* In two issues of *Nature* (June 13 and 20) appears in full a paper by Professor Osborn presented to the National Academy of Sciences at the April meeting, entitled "The origin of species as revealed by vertebrate paleontology." The facts established by the years of research culminating in this paper are partly restated in popular language in "The Earth Speaks to Bryan."

HENRY FAIRFIELD OSBORN
COLUMBIA UNIVERSITY

## ASA GRAY[1]

THE career of Asa Gray has great beauty, indeed it has the dramatic quality which comes of humble origin, far-seeing ambition, persistent effort, large accomplishment and wide recognition.

Born in 1810 at Sauquoit, Oneida County, New York, he was of English and Scotch-Irish ancestry. His parents, humble in situation, were of staunch qualities and great industry. His father, who had had but six weeks of schooling, was a tanner and like most early settlers also a farmer. In boyhood Asa was employed in the homely occupations of the farm and among other duties had the monotonous task of driving an old horse around a circular course to propel the crude mill which crushed the bark used in his father's tannery.

His parents had the Scotch piety and reverence for learning. How soon his education was begun may be inferred from a pretty story gleaned from one of the most authentic accounts of his childhood. His father promised him a spelling book of his own when he could spell all the words up to *baker,* which being of two syllables marked a notable advance. In a few weeks he had accomplished the task and was duly rewarded. Next day as he entered his school, not being permitted to speak to the teacher to proclaim his triumph, he marched past her desk waving his new spelling book before her. This was a little before he was three years old.

With intellectual ideals so early inculcated and so eagerly accepted it is not surprising that he did well in his schooling and that even a college education was contemplated for him. This, for financial reasons, did not prove feasible. Instead, at the age of sixteen, he entered a country medical school. Here he chanced to read an encyclopedia article on botany. He was so interested that he bought Amos Eaton's Manual of Botany and by the aid of this quaint little volume began the study which his own talents were destined so greatly to develop and enrich.

From this simple beginning his progress was rapid. At 17 he was assisting a country doctor; at 20 he had graduated from his medical course and was teaching several of the natural sciences in a boys' school at Utica. When 25 he wrote his "Elements of Botany," a work of unusual clarity and for its period of unsurpassed excellence in America. He had already conducted a course in botany at Hamilton College and was the following year chosen curator of the collections of the New York Lyceum.

By Dr. Torrey he was invited to collaborate on his

[1] Address at the unveiling of the Gray bust in the Hall of Fame, May 21, 1925.

Flora of North America, one of the most difficult and ambitious undertakings of its period. At 28 he was appointed to a professorship in the newly projected University of Michigan and commissioned to make an extended journey in Europe for the selection of books and equipment.

Nothing in Dr. Gray's whole career better illustrates the extraordinary qualities of the man than this first trip abroad. He was both in England and on the Continent received with a kindliness and cordiality which can only be explained by the singularly endearing qualities he must himself have possessed. That was not an epoch in which America was particularly popular abroad. Yet this country-bred American youth became at once the welcomed guest of Sir William Hooker, destined to be the director of the Royal Gardens at Kew. He received personal attention and aid from Robert Brown, the most eminent botanist of the British Museum, and from the distinguished botanists at Paris, Lyons, Montpellier, Padua, Trieste, Vienna, Munich, Geneva, Halle, Berlin and Hamburg. With all these he established friendly relations which continued through life and resulted in a steady interchange of specimens and literature between Europe and America of incomparable value to science. No American scientist, not even Agassiz, himself of European birth, has contributed so much to relations of friendly co-operation across the Atlantic.

In 1842 Gray was chosen to fill the newly created Fisher Professorship of Natural History at Harvard, a position which he continued to hold to the close of his career.

From 1845 to 1870 there occurred the great transcontinental surveys and exploring expeditions which brought in an immense mass of scientific specimens illustrating the flora of the western half of our continent. No one was so well prepared as Gray to classify and publish upon this material, and to him the greater part of it was sent. No one can ever again have such an opportunity. There are no more continents to be opened up in this way. Gray with eagerness and industry, with keen insight and sound judgment devoted himself to this gigantic undertaking. His scientific output was enormous. His writings comprise upward of 400 titles. He was scrupulously careful about his style and even his most technical papers have great finish and lucidity.

Personally he had a charming nature and was the ever welcome associate of that memorable group of talented men of whom Longfellow, Norton, Agassiz, James Russell Lowell and Oliver Wendell Holmes were members. He married Jane Loring, a beautiful daughter of one of Boston's fine old families. Together they made several journeys to Europe which were notable in extending the personal cordiality between New and Old World scientists.

He was a warm friend of Darwin and was the first to publish in defense of Darwin's position when it was subjected to prejudiced and unreasonable attack.

In the seventies Gray again attempted a flora of North America. It had grown to be a task far beyond the powers of any one writer. There can be no surprise that one lifetime was not sufficient for its completion. We can only marvel at the extent and excellence of what he did accomplish.

Gray was fortunate in the period during which he lived. His opportunities were unrivaled. Our country was even more fortunate in having at this epoch a scientist of Gray's acuteness to deal with its botanical problems. Otherwise they would have fallen largely to Old World investigators.

B. L. ROBINSON

HARVARD UNIVERSITY

## SCIENTIFIC EVENTS

### A SECOND TEN-YEAR INDEX TO CHEMICAL ABSTRACTS

THE American Chemical Society is planning to publish a collective index to *Chemical Abstracts* which will cover the period 1917 to 1926 inclusive. This project has been started in 1925 because it is necessary to obtain advance subscriptions to cover the greater part of the big expense and because an early decision as to the feasibility of issuing the index will favorably affect the economy of preparation and date of appearance. The advance subscription blanks were sent out by Secretary Charles L. Parsons, Mills Building, Washington, D. C., on May 9 and up to July 1 a little less than one third of the 3,000 advance subscriptions estimated to be necessary to insure publication had been received.

In view of the fact that *Chemical Abstracts* has stressed completeness in covering the literature of chemistry, the index, if published, will serve as a key to virtually the whole of the world's chemical progress during its most active ten-year period. It is estimated that 7,000 pages of double-column fine print will be necessary to index this literature by authors and by subjects as planned. This will make six big volumes. The subject index will be an index of subjects, not of words (there is a big difference), and it will be based on abstracts, not merely on titles.

It is not thought that the importance of this project needs emphasis. The first Decennial Index to *Chemical Abstracts* was well supported and has proved its