be repeating with infinite variations the experiences which we are having upon the earth at the present time.

Atoms, living beings, stars and galaxies are permanent forms in the universe. It is the individuals only that come and go.

WILLIAM D. MACMILLAN
THE UNIVERSITY OF CHICAGO

THE CENTENARY OF WILHELM HOFMEISTER

DOUBTLESS many can recall certain books which have greatly influenced their lives, and in my own case one stands out especially—a translation of Hofmeister's epoch-making treatise on the comparative morphology of the archegoniate plants. This book, studied while an undergraduate at the University of Michigan, was undoubtedly the most important factor in determining the trend of my botanical investigations for many years.

It was, therefore, particularly interesting for me to find myself a few years later a student in the botanical institute at Tübingen, where Hofmeister spent the last years of his life.

This picturesque old Suabian town, not far from the Black Forest, lies in the beautiful valley of the Neckar, surrounded by an extremely attractive country. Tübingen will always be famous in botanical annals as the domicile of a line of great botanists, among whom three may be especially mentioned—Mohl, Hofmeister and Pfeffer—surely a sufficiently notable trio for one small university.

Mohl, one of the greatest botanists of his time, founded the botanical institute at Tübingen, in its earlier days the best equipped in Germany.

During my sojourn for the summer semester of 1887, Pfeffer was director, but in the autumn of that year he removed to Leipzig, where his brilliant record is familiar to all botanists, and where many American students studied under his direction.

These memories of Tübingen were recalled through a recent address[1] by one of Hofmeister's most distinguished students, Professor Goebel of Munich. This was delivered at Tübingen, at the celebration held on May 18, 1924, the hundredth anniversary of Hofmeister's birth.

In these days, when the study of comparative morphology is looked at more or less askance by many of our younger botanists, the immense significance of Hofmeister's early work is scarcely understood. These remarkable investigations, necessarily lacking some of the precision made possible by modern technical methods, nevertheless form the solid foundation upon which has been raised the great edifice of comparative morphology, and there is no question that Hofmeister's work will remain as probably the most brilliant contribution ever made to this fundamental department of botany.

Hofmeister's activity began in the period which Goebel has called the "renaissance of botany," when botanists began to break away from the Linnean tradition which for the first third of the nineteenth century was still dominant, and made taxonomy the all-important subject of botanical activity. The brilliant beginnings of anatomy and physiology, made in the seventeenth and eighteenth centuries, had almost sunk into oblivion.

Among the great names of this renaissance is Hugo von Mohl, whose name will always be associated with the study of protoplasm, to which he gave the name still in use. As we have already stated, Mohl was the first director of the Tübingen botanical institute, and was succeeded by Hofmeister.

Hofmeister's first paper was published when he was twenty-three. *A propos* of this Goebel writes:[2] "This was especially remarkable as he was entirely self-taught. It is true that at this time there were no botanical institutes where one could receive instruction in botanical investigation. The technical methods were not so developed and mechanical as is the case to-day, when often the technique of a botanical investigation has a greater specific weight than its 'Gedankennihalt'!"

In 1851, when he was twenty-seven years old, he published his remarkable studies on the structure and development of the archegoniate plants—mosses and ferns; and somewhat later his investigations were extended to include the seed-bearing plants as well. It is these "Vergleichende Untersuchungen" which are Hofmeister's greatest contribution to science and which rank with the most important that have ever been made.

These investigations covered a wide range of forms, and demonstrated beyond question the essential similarity between the archegoniates and the lower seed-plants, and effectively broke down the supposed barrier between "Cryptogams" and "Phanerogams." They showed the essential likeness in the life-histories of all these plants, the regular alternation of sexual and non-sexual generations; and eight years before the appearance of the "Origin of Species," gave a concrete demonstration of the derivation of the higher types of plants from lower ones.

The importance of these investigations as bearing

[1] Goebel, K. Wilhelm Hofmeister. Tübinger Naturwissenschaftliche Abhandlungen. 8. Heft. Tübingen, 1924.

[2] *Loc. cit.*, p. 2.

upon the theory of evolution was recognized in England, and in 1862 a translation was published by the Ray Society.[3]

Hofmeister was born in Leipzig, where he passed through the Realschule, but did not attend the university. He took up a business career as a music dealer. How he accomplished the extraordinary output of scientific work, culminating when he was only twenty-seven in the famous "Vergleichende Untersuchungen" which inaugurated a new era in plant morphology, is a mystery. It would seem that his music business could hardly have been a very flourishing one. It would do no harm if some of our present-day investigators who are wont to complain of lack of time for research could be reminded of the conditions under which Hofmeister's most important work was done.

He was soon recognized as one of the outstanding scientific figures of his time, and in spite of the fact that he had never attended a university, he was later given the doctorate, and in 1863 was appointed to a professorship at Heidelberg. Nine years later he was called to Tübingen as Mohl's successor.

Owing to failing health, he retired from active work some time before his death, which took place at Lindenau near Leipzig, January 12, 1877.

Whatever phase of botany may happen to be the fashion as each new crop of workers comes up, and however often the point of view may change, it is safe to predict that Hofmeister will remain in the front rank of the great masters of botany.

DOUGLAS HOUGHTON CAMPBELL
STANFORD UNIVERSITY

[3] "On the Germination, Development and Fructification of the Higher Cryptogamia, and on the Fructification of the Coniferae." Translated by Frederick Currey, M.A., F.R.S.

SCIENTIFIC EVENTS

THE BRITISH ASSOCIATION

DETAILS of the local arrangements for the Southampton meeting of the British Association for the Advancement of Science, which meets from August 26 to September 2, under the presidency of Sir Horace Lamb, are given in *Nature*.

The reception room will be the King Edward VI Grammar School, which is conveniently and centrally situated, facing the open space called the Marlands, on one side of which is the public stance for charabancs, while close behind it is the West Station on the main Southern Railway line from Waterloo to Weymouth, at which most of the visitors to the meeting will alight from their trains. For the convenience of the members it has been arranged with the railway authorities for a special train to be run from Waterloo on the day before the opening of the meeting (Tuesday, August 25). Within easy distance of the Grammar School are to be found the shops and restaurants of Above Bar Street, and an agreement has been reached with a firm of local caterers to take for the week of the visit the Coliseum, a hall capable of seating 1,600, and run it as a restaurant at which lunches and teas may be had.

Garden parties have been offered by Lord and Lady Swaythling at Townhill Park; Lord and Lady St. Cyres at Walhampton, near Lymington, and Mr. W. Collins at Westend; while the Cunard and White Star Companies have invited as many members as may care to go to see over one of their ships.

Southampton is remarkable for its fine open spaces, which stretch from the lower part of the town almost without break to the Southampton Common, the latter covering an area of more than 360 acres of virgin land. Its immediate environs include many places of great natural beauty. General excursions are being arranged to visit old Southampton, the Docks, New Forest, Stonehenge and other places of interest in the neighborhood. The full list of excursions, including sectional ones and visits to works, will be given later in detail. While tickets for the general excursions will be obtainable at a counter in the reception room, those for all the sectional excursions may be had from the local sectional secretaries at the various rendezvous of the sections during the week of the visit. The committee of the Royal Yacht Club has very kindly extended hospitality of honorary membership to the visiting members of the British Association.

ANTI-VIVISECTION

WE are permitted to publish the following correspondence between Dr. David Starr Jordan and Mr. Luther Burbank:

STANFORD UNIVERSITY P. O.
CALIFORNIA
June 1, 1925.

Mr. Luther Burbank
Santa Rosa
California.

My dear Burbank:

Will you pardon one of your oldest friends to express sincere regret over your endorsement of the work of an "Anti-vivisectionist Society?"

To my mind, and I have good reason to know it, this movement is based on the same kind of ignorance and prejudice that animates the much less mischievous anti-evolutionist organizations. The progress of sanitation, associated with that of medicine, has been along the very firing line of science for the last fifty years, ever since the discovery of bacteria and their relation to infectious