British Association for the Advancement of Science

Seismological Investigation, Reports of the Committee

for the years

1896 to 1954
SCIENCE IN BRITAIN

THE BRITISH ASSOCIATION

BY SIR RICHARD GREGORY, Bt., F.R.S.

(Note.—This is the English text of a broadcast recently prepared by the President of the Association for a series of talks on British science given in South American programmes of the B.B.C. in Spanish and Portuguese. It outlines the peace-time activities of the Association, some of which are necessarily in abeyance now; it will therefore interest especially those who have come into contact with the Association only during the war period.)

The British Association for the Advancement of Science was founded in the year 1831. In the same year the world-renowned naturalist, Charles Darwin, left England in H.M.S. Beagle as a member of the famous expedition to the Pacific. Between 1831 and 1836 the expedition surveyed the South American coasts and adjacent islands, including the Galapagos Islands, and also the coasts of Australia and New Zealand. Darwin recorded that the voyage was the most important event in his life and it determined his whole career. The geological and other natural history notes made by him during the voyage, especially along South America, were the basis of most of his later works.

Exactly a century ago, Darwin prepared a short account of the facts observed by him which indicated relationships between different living things and suggested a common line of descent. Also, in the year 1842, was published his great work on 'The Structure and Distribution of Coral Reefs,' which gave the results of his own observations of coral atolls in the Pacific and Indian Oceans, and threw new light upon their structure. He suggested that cores should be obtained by boring of such reefs in order to discover how deep the coral rock extended below the limit of about thirty fathoms in which the coral organisms can live. The British Association was the first body to set such a project on foot, with the result that cores obtained at depths of more than a thousand feet were found to be built up of the remains of coral organisms living near the surface of the ocean.

One of the chief characteristics of the British Association is that of taking the initiative in promoting or undertaking scientific investigations of this kind. This applies also to other movements of national interest to which the British Association gives its authority and appeals for support. The acquisition and preservation of the house in the village of Downe, Kent, where Darwin lived for forty years and wrote his great work on 'The Origin of Species,' was the result of such an appeal made at an annual meeting of the Association by the President, Sir Arthur Keith. Darwin took up his residence in the house exactly a century ago and died there in 1882. Through the generosity of a distinguished surgeon, Sir Buckston Browne, the house and grounds were purchased in 1927 and transferred to the possession of the British Association, with an endowment towards its maintenance as a national memorial.

The chief rooms have in them furniture and objects used by Darwin himself and are decorated to reproduce the surroundings in which he worked. Charles Darwin's home at Downe has thus now become a place of pilgrimage similar in character and contents to the home of George Washington at Mount Vernon, Virginia, and similarly brings thousands of visitors to the shrine.

The British Association differs from other scientific societies in the fact that no professional rank or other technical qualification is required on the part of an applicant for admission to its membership. It is, therefore, open not only to scientific students and investigators, but also to any member of the community interested in science. The Association does not invade the field marked out by other scientific organisations, but provides common ground on which representatives of them all can meet to discuss methods and results of scientific research and foster public interest in them.

The objects for which the Association was constituted are: to give a stronger impulse and a more systematic direction to scientific enquiry; to promote the intercourse of those who cultivate science in different parts of the British Empire with one another and with foreign philosophers; to obtain a more general attention for the objects of science and the removal of any disadvantages of a public kind which impede its progress.

The legislative body of this parliament of science is a General Committee of about seven hundred members who have qualified to serve upon it by the publication of contributions to the advancement of science. This Committee has similar functions to those of the British Parliament and it similarly elects the Council and Officers to act as a Cabinet governing the Association's affairs.

The Association meets annually as a corporate body, and the place of the meeting is decided by the General Committee not less than two years in advance. Invitations to meet at particular places are sent to the Association by municipal and other authorities; and there are usually several of these awaiting acceptance every year. The average number of membership tickets issued at an annual meeting is above two thousand, but at some meetings the number has been more than twice as great. At every annual meeting many local residents and others not professionally engaged on scientific work become members, and the expenses of the meeting are borne by the local authorities and their supporters. Since the foundation of the Association in 1831 meetings have been held in most of the chief cities and towns of Great Britain, as well as in Ireland, Canada, South Africa, Australia, and India.

There are now thirteen sections of the Association, each with its own president and secretaries, and together they cover all branches of scientific knowledge. The sections meet separately for the consideration of their own special subjects,
but two or more sections often meet jointly for the
discussion of contributions of common interest.
Communications to the various sections relate
usually to the position of researches in which the
authors are engaged and to problems arising out of
them.

Results of new investigations are often an-
nounced at the annual meetings and are some-
times of great scientific interest. For example, it
was at the annual meeting at Oxford in 1894 that
Lord Rayleigh and Sir William Ramsay an-
nounced the discovery of a new gas, to which the
name argon was given, in the earth's atmosphere.
This gas is now widely used to increase the life
and efficiency of electric bulb lamps. Another
similar gas, neon, afterwards isolated from the air,
is used in electric discharge tubes for advertisement
and other purposes. The discovery of the exis-
tence of the electron, upon which the transmission
and reception of electric waves used in all forms
of radio communication depend, was announced
by Sir Joseph Thomson at the annual meeting of
the Association in 1897. Five years earlier, Sir
Oliver Lodge had given, at the annual meeting,
the first demonstration that electric waves could
be used for signalling in the Morse code, over a
distance of sixty yards, through two internal and
one external wall.

At every annual meeting, research committees
are appointed to report upon particular subjects
and problems of scientific importance. These
reports, presented at following meetings, consti-
tute the most influential part of the Association's
activities. The work of these committees is
entirely voluntary, but small financial grants are
made to cover essential expenses. Fully one half
of the total receipts for membership tickets for
annual meetings have been devoted to scientific
investigations by means of such grants, the total
amount being about £1,000 a year. The Associa-
tion receives no assistance from public funds, and
possesses, therefore, the freedom of service highly
cherished by most British scientists.

Through its research committees, the Associa-
tion has initiated many new scientific movements
which have afterwards been maintained from
public and other funds. The Kew Observatory,
now under the British Meteorological Office, and
one of the most renowned institutions in the
world, was placed at the disposal of the Association
by Queen Victoria just a century ago. The
Government at that time had decided no longer
to maintain the building as an observatory and
museum, for which purposes it had been built by
King George III. In spite of its slender financial
resources, the responsibility for maintaining the
Observatory as a centre of work in meteorology,
terrestrial magnetism and electricity, and related
subjects, was undertaken by a committee of the
Association, and the results of this decision have
influenced the progress of geophysical knowledge
everywhere. Between 1843 and 1872 the
Association made grants to the Kew Observatory
amounting to £12,300, by far the largest total to
any of its committees at any time in its history,
and the whole of this amount was derived from
the membership subscriptions at annual meetings.

Another example of work of international value
is that carried out by British Association Com-
mittees on electrical standards. Eighty years
ago there were no generally recognised units or
standards for the measurement of electrical
resistance, current, electromotive force, quantity,
capacity and similar values. The Association
undertook investigations of this subject over a
long period of years, and the standards specified
and constructed by its committees have become
international, thus assisting trade and manufac-
ture everywhere. In all the principal countries
of the world the same electrical units and stan-
dards are adopted. The British Association was
responsible for the institution of this uniform
system.

Reports of this kind, with the inaugural address
given annually by the President of the Association,
and the addresses delivered to the separate
Sections by their respective presidents, are now
published in a quarterly review with the title,
'The Advancement of Science,' instead of a
bulky annual volume. The current issue of this
review includes all the papers read at the Confer-
ence on Science and World Order held in London
in September of last year. The Conference was
arranged by the Association's Division for the
Social and International Relations of Science,
and was attended by distinguished men of science
and other citizens of more than twenty nationali-
ties. This was the first occasion upon which
representatives of science, administration and
government met together to consider problems of
the adjustment of progressive scientific knowledge
to social action.

The Division was established in 1938 to further
the objective study of contacts of science with
social conditions, and to promote the welfare of
human communities by international under-
standing of them. It is empowered to hold
meetings or conferences at any time with the view
of attaining these objects; and it represents the
response of the Association for co-operation in the
shaping of a social structure worthy of the powers
which science has given to civilised communities.
When General Smuts was President of the
Association at the Centenary Meeting in 1931,
he pointed out in his presidential address on
'The Scientific World-Picture of To-day,' that
'One of the greatest tasks before the human race
will be to link up science with ethical values, and
thus to remove dangers threatening our future.'
Every president since then has referred in his
inaugural address to the social implications of
science and the need for effective recognition of
them. By the establishment of its new Division
the Association has adapted itself to the needs of
the times, and provided a new co-operative
federation of thought and action on contacts of
science with social and international affairs.

Every association for the advancement of
science, constituted like the British Association
and including not only scientific workers but also
members of the community engaged in other
pursuits, can take part in this development of its
fields of activity. Freedom from any sort of
political influence or domination is a character-
istic of British scientific societies and is essential
for the impartial study of social and international
problems. Since the British Association was
founded, similar bodies have come into existence
in the United States, Australia, New Zealand,
South Africa, and other countries, and all of them
possess the spirit of co-operation for the increase of knowledge and the service of mankind.

Meetings of the Association outside Great Britain have always stimulated interest in science and its relationships to the community. There is nothing in the constitution of the Association to prevent such meetings being held outside the British Commonwealth, or for delegates to be sent to a conference in any country. The expanded outlook represented in the new Division for the Social and International Relations of Science can give high public significance, as well as scientific authority, to such a meeting anywhere in the world.