have been pursued farther and faster than they foresaw. Scientific discovery, from which above all their doctrines of progress derived, has swept forward on an enormous front. The conquest of the air has made possible an intercourse and understanding between distant peoples such as our ancestors could not imagine—and it has been diverted to the vast destruction of men and cities. The invention of wireless telephony has opened a channel through which liberating truths might be proclaimed to all the listening earth—and every would-be despot has used it to suborn the blind masses into the worship of false gods. The medical art has performed miracles; the cures of immemorial pestilences have been found, infancy has been safeguarded and old age tended, so that the normal expectation of life has been extended by years—aside from the new and universal apprehension of sudden death."

To my mind it is vital that the two sides of scientific development are fully and clearly understood, not only by the research scientist, inventor, designer and the whole scientific team, but also by all laymen. The instrument of scientific knowledge in our hands is growing more powerful every day; indeed, it has reached a point when we can either set the world free from drudgery, fear, hunger and pestilence or obliterate life itself.

Progress in almost every form of human activity depends upon the continued efforts of scientists. The nation's wealth and prosperity are governed by the rapid application of science to its industries and commerce. The nation's workers depend upon science for the maintenance and improvement in their standards of health, housing and food. Finally, superiority or even our ability to survive in war is a direct measure of the excellence and capacity of the scientific team.

This team of research workers and engineers has a dual responsibility, one for its work and the other as informed citizens, and it can only fulfil its proper functions if its members have a sound general education as well as a thorough training in science. It is no less important that the people who control the scientific machine, both laymen and scientists, should have a proper understanding and appreciation of what science has grown into and its place among the great forces of the world.

It is clearly our duty as citizens to see that science is used for the benefit of mankind. For, of what use is science if man does not survive ?

SUMMARIES OF ADDRESSES OF PRESIDENTS OF SECTIONS

A HUNDRED YEARS OF METEOROLOGY

IN his presidential address to Section A (Mathematics and Physics) Sir David Brunt outlines the development of meteorology during the past hundred years. Before dealing with his main theme, he points out that the Greek philosophers Aristotle and Theophrastus had developed meteorology in the fourth century B.C. so far that their ideas dominated the meteorological thought of Europe for nearly two thousand years, while Pindar set up a standard of forecasting which even to-day is difficult of attainment, except on rare occasions.

The re-awakening of independent thought took place about the time of the foundation of the Royal Society in 1660, and the influence of that Society remained very great up to the time when control of official meteorology in Great Britain passed into the hands of the Air Ministry in 1920.

Many workers with creative minds have, of course, been indispensable on the research side of meteorology, and the names which Sir David mentions include those of astronomers such as Halley and Laplace, and physicists such as Lavoisier, Wheatstone and Glazebrook. Of particular importance was Sir Napier Shaw, the more so because Shaw was instrumental in adding the names of those most prominent in Great Britain during the past sixty years, for example, W. H. Dines, C. J. P. Cave, E. Gold and G. I. Taylor. Shaw's services should be judged against the background of the Meteorological Office, to which he went as director in 1905. Shaw found a 'Slough of Despond', into which he contrived to instil some of his own enthusiasm. Shaw made the greatest written contribution to meteorology of the century when he published, in 1906, the memoir entitled "The Life History of Surface Air Currents", a work in which he was assisted by R. G. K. Lempfert. This anticipated the paper entitled "Life Cycle of Cyclones and the Polar Front Theory of Atmospheric Circulation", by J. Bjerknes and H. Solberg, which has laid the foundations of the method of forecasting weather which has been developed during and since the Second World War.

Turning then to the research work now being done in Great Britain as part of a revived scheme of international co-operation, Sir David points out that the problems receiving increased attention include: (*a*) the nature of the depression of middle latitudes; (*b*) effects of atmospheric radiation and absorption on the heat balance of the atmosphere; and (*c*) formation of cloud, rain, ice-crystals and snow. Items (*b*) and (*c*) have given the most positive results; as regards (*a*) we cannot predict where the next depression will form, or even explain the precise conditions which led to the formation of yesterday's depression. In the case of (*b*) the approximate balance of radiation and absorption in the atmosphere can now be evaluated by graphical methods due to Elsasser in the United States and Robinson in Britain. In the case of (*c*) we now nearly understand the condensation of ice, and also the artificial production of precipitation. Another new matter which is being investigated has come to the fore as a result of further advances in aircraft design, making flights possible at very high altitudes. These have revealed a new phenomenon called the 'jet stream'. This is a stream of air, at levels between 15,000 ft. and 40,000 ft., moving roughly eastwards at speeds of 130 knots or more, and traceable for great distances downwind, but sharply restricted vertically and transversely.