non-commercial programs on all networks. Many will regret that owing to war demands the National Broadcasting Company has felt obliged to take this program off the air.

In cooperation with the National Geographic Society and with the good will of the Mexican Government, Mr. Matthew W. Stirling, chief of the Bureau of American Ethnology, has excavated sites in southern Mexico during the past three years. His work was very fruitful. Stelae carrying the earliest known dates in American archeology were found. Also a number of colossal portrait heads in stone, having most interesting negroid characteristics. At the very end of his digging in 1941, Mr. Stirling opened a cache of nearly a hundred jade objects, unprecedented in America.

Dr. F. H. H. Roberts, Jr., also of the Bureau, continued for several years the excavation of the Lindenmeier site in northern Colorado, rich in Folsom points and bones of extinct animals. He found evidences of occupation by men contemporaneous with post-glacial phenomena of perhaps 20,000 years ago. In one instance a Folsom point was found imbedded in the vertebrum of an extinct species of bison. Bones of camels and other extinct forms evidence the antiquity of these layers, some 15 feet below the present levels. The post-glacial age of the site was determined by cooperating geologists from Harvard University.

Another branch of science has received a valuable contribution from the Institution this year. Volume 6 of the Annals of the Smithsonian Astrophysical Observatory was published in April, 1942, by the generous provision of Mr. John A. Roebling, to whose support for twenty years the investigation is greatly indebted. Volume 6 contains a detailed account of the methods employed to determine the solar constant of radiation from observations in North and South America and Africa. A table of 78 quarto pages gives the daily determinations of the years 1923 to 1939, and is followed by a table of 10-day and monthly means. It is shown that the sun's output of radiation varies from day to day in close correlation with the areas of solar faculae. The rotation period of 27 days is well shown by solar variation. Fourteen long periods ranging from 8 months to 23 years are indicated. It is claimed that the weather, both from day to day and through seasons and years, is profoundly affected by these long- and short-range solar variations. As regards wave-length, it is shown that the sun's variations are slight for red and infra-red rays, and only of the order of 1 to 3 per cent. at maximum for total radiation. But the variation increases rapidly towards shorter wave-lengths, and becomes six times as great for ultraviolet rays as for total radiation.

Such are some of the recent enterprises of the Smithsonian Institution. It would be invidious to mention the outstanding services which individuals of its staff are giving to government services in this crisis, and it would unduly prolong this paper to speak of many other interesting operations of the Institution. Its usefulness is due in great measure to its unique character as a ward of government, endowed with a small but freely disposable private income, and looked upon with respect and favor, the world around, on account of its shining history of nearly a century.

OBITUARY

DAVID WILLIAM CORNELIUS

DR. D. W. CORNELIUS, head of the physics department at the University of Chattanooga until his retirement in 1941 on account of ill health, died on June 2, 1942, at Vincennes, Indiana, at the age of 57 years. For six years his health had become increasingly poor, the illness being finally diagnosed as cerebral arteriosclerosis, something for which medical science has as yet found no cure. In spite of a reduction in teaching duties in 1939, a leave of absence in 1940 and his retirement to emeritus status in 1941, Dr. Cornelius was unable to stem the development of the fatal disease. But throughout these trying times he maintained the same cheerful disposition which has endeared him to a host of acquaintances and friends.

Dr. Cornelius was born in Linton, Indiana, and was a graduate of DePauw in 1906. He did graduate work at the Universities of California and Illinois, receiving his doctorate from the latter institution in 1912. He served as assistant in physics at DePauw, Purdue and California, as professor of physics and engineering at Ottawa (Kansas), assistant professor of physics and astronomy at the University of Kansas, instructor in physics at Missouri University, and professor of physics at Alma College, until he was called to the University of Chattanooga as head of the physics department in 1920.

Dr. Cornelius is known chiefly as an inspiring teacher and for the many physicists who have received their college training under his careful guidance. His professional interests were numerous and he was a member and regular attendant of the various scientific societies in his field. He was a member of the executive council of the American Association of Physics

Teachers, president of the Tennessee Academy of Science and vice-president of Sigma Pi Sigma, physics honor society.

The board of trustees of the University of Chattanooga by resolution mentioned, among other things, his zeal in building up the physics department and his effectiveness and high standards as a teacher. The resolution refers to the fact that "He cultivated in his students the spirit and methods of original research."

Dr. Cornelius is survived by his wife, Orrelle F. Cornelius.

MARSH W. WHITE
THE PENNSYLVANIA STATE COLLEGE

SCIENTIFIC EVENTS

A BRITISH VETERINARY EDUCATIONAL TRUST

DR. W. R. WOOLDRIDGE, president of the British National Veterinary Medical Association, has announced the formation of a Veterinary Educational Trust to raise and administer funds to provide better facilities for the education of veterinary surgeons.

It is proposed to raise a minimum sum of £1,000,000 for the trust. The *Times*, London, writes editorially as follows:

On many occasions since the last war attention has been drawn in these columns to the strange anomaly that, while breeding and exporting some of the best livestock in the world, Great Britain has lagged far behind other countries in the matter of equipment for the study and teaching of veterinary science. As long ago as 1929 a departmental committee appointed by the Minister of Agriculture strongly criticized the condition of the Royal Veterinary College. In the following year Lord Harewood raised the question in the House of Lords. Eventually a royal charter was granted constituting a new governing body, and in 1937 the present buildings of the college (replacing those that had been in use since 1791) were opened by the King and Queen. All this showed distinct, though slow, progress; yet it was not enough. Another government committee, reporting in 1938, declared that "veterinary education has been starved, the veterinary schools are overcrowded, teaching staffs are inadequate . . . facilities for clinical and practical training are insufficient and the system of education and courses of study also need amendment." These were strong criticisms, which the committee supplemented with valuable suggestions. One of these suggestions was that each veterinary school should have its field station, and in some of them—the Liverpool Veterinary College, for example—this has now been achieved. Obviously, however, there can be no complacency over a state of affairs which has lately drawn from such an authority as Sir Arthur Olver the accusation that "there is no other country in which livestock has such tremendous importance or in which so little has been done for veterinary education. . . . The necessary facilities are still not available in this country for adequate practical instruction."

With these facts in mind it is possible to appreciate the full importance of the announcement made by the president of the National Veterinary Medical Association that a veterinary educational trust has been formed with the object of improving veterinary education in this country and in the hope of raising for that purpose a fund of at least a million pounds. The sum is large, but it will give the nation an idea of the importance of the issues at stake. There are in this country, as Dr. Wooldridge has reminded us, only 2,000 active veterinary surgeons to cope with a task that could well employ twice that number. Britain's inadequate educational services, moreover, have the responsibility of providing veterinary surgeons for the Colonial Empire. The war has shown up some deficiencies here, as in other places. Animal health is an essential part of the economy of husbandry. Animal diseases must mean loss and waste and may, in some forms, have their effect upon public health. The revival of British agriculture on a permanent basis will demand all the aid that science can give and, not least, all that an improved and developing system of veterinary science can contribute in the way of prevention as well as of cure. More veterinary surgeons and a better training are needed, and a million pounds is by no means too large an endowment to demand for these purposes.

THE PROFESSIONAL TRAINING OF CHEMISTS

THE sixth progress report of the committee of the American Chemical Society on the professional training of chemists, which met in April, recently appeared in *Chemical and Engineering News*.

It is reported that students who receive the bachelor's degree from institutions in the official list after fulfilling the minimum requirements adopted by the society for the professional training of chemists become eligible for full membership following graduation and two years' experience in the field of chemistry or chemical engineering or in postgraduate study. Students who graduate in chemistry or chemical engineering from other colleges will be eligible only after five years. In each institution listed, the head of the department of chemistry will be asked after each graduation period to give the committee the names of those students who have fulfilled the specified requirements and who will thus, in the minimum time, qualify professionally for full membership in the society. Students majoring in chemistry or chemical engineering and graduates without the experience requisite for full membership may join as junior members with all privileges of membership except that of holding office. They thus gain seniority in the society and are automatically transferred to full professional status on acquiring the necessary experience.