mittee consisting of twenty-four members of the American Institute of Electrical Engineers. A statement issued by the institute reads:

Edwin Howard Armstrong was born in New York City on December 18, 1890. He began his engineering studies at Columbia University and became a protégé of Michael I. Pupin, Edison Medal recipient in 1920, with whom he worked closely on many important research undertakings.

While an undergraduate he became interested in the operating properties of the audion detector and set out to learn more of the principles of operation of thermionic tubes. The research that followed at his home in Yonkers, New York, resulted in his invention of the feedback or regenerative circuit which became the means not only of increasing the sensitivity of the audion as a detector of radio signals but also became the means of producing for the first time continuous high frequency oscillations by means of a thermionic tube. He filed applications on this invention in the latter part of 1913 and a patent was issued to him on October 6, 1914. In December, 1914, he published the first scientifically correct explanation of detection and amplification in the audion detector and in March, 1915, disclosed the regenerative and oscillating circuits.

This keystone of radio development was later to become involved in fourteen years of litigation and which in the end was decided by lay courts based on errors of fact and judgment which were contrary to the scientific facts.

He was graduated from Columbia University in 1913 with a degree of electrical engineer, and continued as an assistant in the department of electrical engineering. In 1915, he received the Trowbridge Fellowship from Columbia University.

In 1917, Armstrong entered the service of the United States Army as a Captain in the Signal Corps, and later was promoted to rank of Major. While serving in this capacity in France, he made his second invention which was destined to be another cornerstone in the development of the radio communication art. This was the superheterodyne receiving system.

This system of receiving far surpassed any development up to that time and it is still the type of circuit used to-day in practically all radio receivers.

The third outstanding invention was his development of the super-regenerative circuit which was disclosed to the art in 1922. This system of radio reception provides a means of increasing the sensitivity of a detector above that normally obtained by means of simple regeneration. This receiving circuit supplied the principal means of exploring and developing the ultra short wave channels.

The fourth outstanding invention of Major Armstrong was the development of wide band frequency modulation in 1933. This system is now recognized as the basis for an entirely new era in radio broadcasting and communication. All the broadcasting companies and many individual broadcasters have either applied to the Federal Communications Commission for licenses or have transmitters in operation using this system. There are 17 stations already on scheduled operation and it is conservatively estimated that 30 or more will be in service by the end of the year. The Federal Communications Commission has over 150 applications pending before it at this time.

This system of radio communication is radically different from the amplitude modulation system now in general use. It provides a means for producing static-free and noise-free signals with a fidelity and tonal range not previously obtained with the present broadcast facilities. In addition to eliminating much of the noise level from broadcast radio programs which are prevalent in urban areas the system provides means for transmitting on several separate channels over one carrier and in addition makes possible the use of the same carrier frequency by a number of stations separated by only a few hundred miles without causing mutual interference on that frequency.

Probably no one man has contributed as many fundamental radio inventions which so closely touch on our everyday life as Major Armstrong. The discovery of the regenerative circuit made possible long distance wireless communication and the building and operation of world-wide communication systems. Then, as broadcasting began to grow, the superheterodyne circuit became the greatest stimulant to the art bringing with it better reception and the attendant increase in enjoyment to millions of listeners. At the same time the manufacture of apparatus and the building and operation of stations brought work and prosperity to thousands. The super-regenerative circuit made practical the first 2-way police communication systems on the ultra short waves and has resulted in more rapid police action in safeguarding property and in the protection of life and limb. Now the frequency modulation system of communication is beginning to give the public a finer radio service and like Major Armstrong's other inventions is destined to add much to the nation's enjoyment and wealth.

Professor Armstrong has received many honors, including the degree of doctor of science from Columbia University in 1929, and from Muhlenberg College in 1941, the Medal of Honor of the Institute of Radio Engineers, 1917, the Egleston Medal of Columbia University, 1939, the Holley Medal of the American Society of Mechanical Engineers, 1940, the Franklin Medal of the Franklin Institute, 1941, and the John Scott Medal, awarded by the Board of Directors of City Trusts, City of Philadelphia, 1942. He was made a Chevalier de la Légion d'honneur by the French Government in 1919. He received one of the nineteen national awards of "Modern Pioneer" by the National Association of Manufacturers in 1940.

SCIENTIFIC NOTES AND NEWS

SIR HENRY DALE was reelected president of the Royal Society at the two hundred and eightieth anniversary meeting which preceded the celebrations of the tercentenary of the birth of Isaac Newton.

DR. EVARTS A. GRAHAM, Bixby professor of surgery, Washington University School of Medicine, St. Louis, was presented with the St. Louis Award during special ceremonies in the mayor's office on November 5. The award is given annually by an anonymous donor to the citizen of St. Louis who has made "the most outstanding contribution to the community during the year." It includes a check for $1,000 and a certificate. The award was made in recognition of Dr. Graham's development of pulmonary and hepatic surgery, his productive leadership as a teacher of students and practitioners and for his influence on surgical theory and practice, and in particular for his "comprehensive focusing of present knowledge on the treatment of war injuries, thereby making this information easily available to all surgeons for the conservation and rehabilitation of the victims of the carnage of war."

EDWIN C. WELLS, principal contributor to the design and engineering work on the flying fortresses manufactured by the Boeing Aircraft Company of Seattle, will receive the Lawrence Sperry Award of the Institute of the Aeronautical Sciences. The citation reads: "For outstanding contributions to the art of airplane design with special reference to four-engined aircraft."

E. MEAD JOHNSON AWARDS for research in pediatrics for 1941 were presented through the American Academy of Pediatrics at its annual meeting in Chicago in November. The prize of $500 was presented to Drs. Howard A. Howe and David Bodian for their work in poliomyelitis, and the prize of $300 went to Drs. Harold E. and Helen C. Harrison for their "painstaking work on the excretion and absorption of phosphate by the kidneys."

FREDERICK S. BACON, director of a laboratory for chemical research and consultation in Watertown, Mass., has been elected chairman of the Northeastern Section of the American Chemical Society.

THE following officers were elected at the annual general meeting of the British Rheologists' Club, held on November 6: *President,* Dr. C. F. Goodeve; *Honorary Secretary,* Dr. G. W. Scott Blair; *Honorary Treasurer,* Dr. V. G. W. Harrison. After the transaction of formal business, Professor E. H. Rideal gave an informal address on "Solutions of Macromolecules."

DR. CYRIL BANKS, of Nottingham, has been installed as president of the British Society of Medical Officers of Health.

PROFESSOR EDWARD M. LEHNERTS, chairman of the department of geology and geography of Hunter College, New York City, has retired. He was appointed associate professor in the department of natural sciences in 1920, and became head of the department of geology when it was established in 1921. In 1929, he was promoted to a full professorship and in 1938 became chairman of the department of geology. Professor Henry D. Thompson has been elected to finish the unexpired term of Professor Lehnerts.

THE *Journal* of the American Medical Association states that Dr. Joseph S. Lichty, Shaker Heights, Ohio, of the Cleveland Trust Company, has been appointed assistant dean of the faculty of medicine at Harvard University and assistant professor of medical administration. Dr. Franklin F. Snyder, Chicago, has been appointed associate professor of anatomy and obstetrics at the Medical School. Dr. Frederick J. Stare, of the University of Wisconsin, has been appointed assistant professor of nutrition, which is reported to be a new title connecting the clinical and laboratory branches of nutritional science. Dr. Stare will work both in the laboratory and in the field in connection with the Medical School and the School of Public Health. Dr. Henry P. Treffers, an immunochemist, has been named to the newly established position of assistant professor of comparative pathology and biologic chemistry. A new office, known as "Medical School Research Laboratories," has been organized under U. Haskell Crocker. The object is to coordinate and centralize the business details of the various research projects in progress, operating under contract with the Office of Scientific Research and Development.

DR. WALTER B. CARVER, professor of mathematics at Cornell University, takes office on January 1 as secretary-treasurer of the Mathematical Association of America. The national headquarters of the association will be moved to Cornell University from Oberlin College. Professor Carver succeeds Professor W. D. Cairns, of Oberlin, who retires from the position he has held since the association was founded in 1915.

DR. SIDNEY J. FRENCH, professor of chemistry at Colgate University, has been appointed to serve as coordinator of the Naval Flight Preparatory School which will open on January 7. He will organize and direct the new faculty, which will include about fifty teachers. An attendance of six hundred aviation cadets is expected.

DR. CHESTER NORTH FRAZIER has been made professor of dermatology and syphilology at the Medical School of the University of Texas at Galveston. He was formerly professor of dermatology and syphilology at Peiping Union Medical College, China, where he had served for some twenty years. While at Peiping he was instrumental in helping to develop the medical library of the college.

DR. M. DEMEREC, who has been serving as acting

director of the Department of Genetics of the Carnegie Institution of Washington at Cold Spring Harbor, L. I., N. Y., becomes director on January 1, and Dr. Thorne M. Carpenter, acting director, has been made director of the Nutrition Laboratory of the institution in Boston. Dr. Demerec has been associated with the Department of Genetics since 1923, and Dr. Carpenter with the Nutrition Laboratory since 1907.

DR. JOHN W. HEUBERGER, plant pathologist at the Connecticut Agricultural Experiment Station, New Haven, left at the end of November to join the research staff of the Rohm and Haas Company of Philadelphia. Working under the Crop Protection Institute at the New Haven Station, Dr. Heuberger carried on research in organic fungicides. He will continue this work at the Subtropical Experiment Station, Homestead, Fla.

DR. ROBERT L. PENDLETON has been appointed principal soil technologist at the Office of Foreign Agricultural Relations of the U. S. Department of Agriculture. He has been detailed to proceed to Nicaragua and other countries in tropical Latin America in connection with the establishment of the joint agricultural experiment stations. Until Thailand declared war on the United States, he was agricultural adviser and soil scientist to the government there. He was thereafter interned and repatriated on the *Gripsholm*.

PROFESSOR EDWARD KASNER, of Columbia University, recently opened a series of lectures at St. John's College, Annapolis, on the relations of mathematics to the sciences.

ACCORDING to an Associated Press dispatch, Dr. Theodore Dykstra, of the Bureau of Plant Breeding of the U. S. Department of Agriculture, and Dr. Walter C. Lowdermilk, chief of the Division of Research in Soil Conservation, arrived in Chungking on December 10. They left the United States on September 15. They will be joined by a corps of approximately thirty American specialists who will assist in the modernization of the agricultural methods of China.

DR. DAVID RANDALL PYE, formerly fellow of Trinity College, Cambridge, and of New College, Oxford, who has been for many years connected with the scientific side of aeronautics and who succeeded H. E. Wimperis as director of scientific research to the British Air Ministry, has been appointed to succeed Sir Allen Mawer as provost of University College, London.

WILLIAM B. WIEGAND, of the Columbian Carbon Company of New York, has been appointed a member of the Synthetic Rubber Advisory Committee of the Department of Munitions, Ottawa, Canada. Dr. R. V. Yohe, of Akron, Ohio, has retired from the committee.

DR. HENRY B. BIGELOW, professor of zoology and curator of oceanography at Harvard University, has been appointed special representative in charge of Navy V–1 and V–7 enlistments at the university.

GEORGE A. HARDER, publicity director of the Westinghouse Radio Stations, Inc., has reported for active service as a captain in the chemical warfare branch of the Army.

SCIENCE has received the following correction from the Materiel Center of the Army Air Forces: "Attention is directed to the first paragraph of the article 'Oxygen Masks for the A.A.F.' on page 531, of the December 11, 1942, issue of SCIENCE, where a misstatement of fact has been made. The Field Museum of Chicago, Illinois, has not been invited to supervise the production of oxygen masks for the Army Air Forces nor have they been consulted at any time by the Materiel Center in the design of these masks."

THE American Mathematical Society met at the University of Notre Dame on November 27 and 28, with an attendance of seventy mathematicians, eight states being represented. Twelve research papers were presented and discussed and eight additional papers were read by title. As a part of the meeting, the University of Notre Dame held its annual Mathematical Symposium, the subject being "Modern Statistics." In this symposium Professors Jerzy Neyman, of the University of California, and Abraham Wald, of Columbia University, gave two lectures each covering their recent work on the statistical theory.

THE History of Science Society announces the cancellation of its December meeting. The annual business meeting of the society will be held on Thursday, January 7, at 3 P.M., at the Hotel Pennsylvania, New York City.

PRESIDENT ROOSEVELT has signed a bill authorizing the rank of rear admiral in the Dental Corps of the Navy. Previously the highest rank in that corps was captain. It is explained that the Dental Corps is expanding rapidly and that the senior position there now should receive a rank comparable to that of a chief Navy physician, which is rear admiral.

FOR accomplishing "more than seemed reasonable or possible" in the production of chemicals and metals for war, the Dow Chemical Company was presented, on December 29, with two Army-Navy "E" pennants. The Dow Chemical Company is one of the largest producers of industrial chemicals and pioneered in the production of magnesium metal. The chief speaker at the presentation was Major General William N. Porter, chief of the Chemical Warfare Service.

AT a recent general meeting of the Zoological So-

ciety of London, the council, according to the *Times*, London, reported that the number of visitors to the Gardens during the past three months was 629,227 and receipts for admission amounted to £30,091. The total number of visitors during the year up to the end of October was 1,313,821 and the receipts amounted to £56,030, showing an increase of £39,504 compared with the corresponding period of the previous year and of £14,203 compared with the average for the previous five years. The number of visitors to Whipsnade Park during the year up to the end of October was 99,510 and receipts amounted to £4,581, showing a decrease of £5,322 compared with the corresponding period of the previous year.

DISCUSSION

SEVERITY OF NARCISSUS BASAL ROT INCREASED BY THE USE OF SYNTHETIC HORMONES AND NITROGEN BASES

COMMERCIAL bulb growers have recently become interested in the possibility of using growth-regulating substances to obtain increased flower and bulb production as well as disease control. Several materials purporting to accomplish these objectives are now on the market. The effect of a number of such compounds on narcissus bulbs, variety King Alfred, has been studied at the Bureau of Plant Industry Station, Beltsville, Maryland, during the past two years. Included in these studies have been naphthalene acetamide, indolebutyric acid, indoleacetic acid, naphthaleneacetic acid, uric acid, guanidine and allantoin. Before planting in the fall some bulbs were dipped in solutions containing 10 to 100 p.p.m. of these compounds, others in talcum powder containing 1 to 10 parts of these compounds in 5,000 parts of talcum. Several thousand bulbs were planted in suitably replicated plots. In every trial the application of the hormones or nitrogen bases increased the amount of basal rot over that in comparable untreated bulbs. Bulbs apparently healthy were treated after harvest with several of the above-named compounds and developed a significant increase in the amount of basal rot during storage.

In laboratory studies the addition of naphthalene acetamide, indolebutyric acid, allantoin, uric acid and adenine sulfate stimulated the growth of *Fusarium oxysporum* f. *narcissi* (Cke. et Mass.) Sny. and Han., the causal organism of basal rot. This is believed to be the first report of stimulation of a plant pathogen by a synthetic growth-regulating substance of the hormone type or by a nitrogen base. Data presented in a paper by Greathouse and Rigler[1] seem to indicate that increased growth of *Phymatotrichum omnivorum* (Shear) Duggar occurred when xanthine and adrenaline were added to the nutrient solution. At the Buffalo, New York, meeting of the American Chemical Society in 1942 Martin and Fisher reported that adenine increased the virulence of *Escherichia coli*.[2]

Further studies on the effect of synthetic hormones and nitrogen bases on growth and pathogenicity of the basal-rot pathogen and other organisms are in progress and a more extensive report will be presented elsewhere.

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1 Glenn A. Greathouse and Neil E. Rigler, *Phytopath.*, 30: 475–485. 1940.

2 Gustav J. Martin and C. Virginia Fisher, *Abstracts*, American Chemical Society meetings, 28B, 1942.

WHAT IS A GENERIC NAME?

RECENT discussion in this journal on the use of generic names has surprised and puzzled some of my colleagues and me. Certain scientists appear to be exercising a remarkable ingenuity in extricating themselves from a difficulty which does not exist. To these persons it seems to violate some sacred canon to add a plural (or other) termination to the Latin name of a genus. *Paramecium* is correct, but I may not write *Paramecia;* instead I must struggle with such unwieldy phrases as "specimens of *Paramecium*." Or, to adopt the proposed solution of the "difficulty," I may transform the name into a "common noun" and write "paramecia."

According to S. O. Mast,[1] "a generic name is always a collective noun" and "refers to all the individuals which are similar to the type specimens of the genus." By grammatical definition, therefore, it is not a proper noun, which is the name of a single individual. But the same writer further implies that it is not a common noun, since he says he has "obviated this [the difficulty above mentioned] by using the generic name as a common noun." If a name is neither a common noun nor a proper noun, would it be improper to refer to it as an uncommon noun? C. D. Beers,[2] however, gives us the clue to this confusion when he remarks: "The following are some common animal names (hence common nouns). . . ." By "common nouns" in this discussion we are evidently to understand words in everyday use, and nothing grammatical.

The trouble is deeper than grammar—and more important. "A generic name . . . is always in the

1 SCIENCE, 96, 252, 1942.

2 SCIENCE, 96, 403, 404, 1942.