well as stimulated germination increased with the extension in the period of pretreatment until a peak value was reached, and then decreased with further extension of the period of pretreatment.

From this observation and from the effect of different concentrations of the stimulant at different stages of pretreatment, it may be inferred that a certain critical level of the stimulant must be established in the seed before germination can occur, that part of this quantity is contributed by the seed itself and part by an external supply, and that during pretreatment there is at first a gradual accumulation of the stimulant until a maximum quantity is formed and then a dispersal of the accumulated reserve. It may be suggested that as pretreatment proceeds the increasing germination with a standard concentration of the stimulant is the result of a complementary accumulation of the same or a closely allied substance in the seed; and conversely that the decreasing germination is due to a decreasing quantity in the seed which is not compensated by an increasing concentration outside it. The amount in the individual seeds at any stage of pretreatment no doubt varies considerably, and at all stages the variation must involve some seeds that can provide the whole of their own stimulant requirement; the number of these seeds must vary, of course, with the average stimulant content of the sample, hence probably the general correspondence between change in stimulated and independent germination during the course of pretreatment.

Summary

There is abundant evidence to show that with certain fungal spores, pollen grains and seeds, germination will not occur when external supplies of particular activators are not available. Normally the activators are produced in actively metabolizing tissues from which they are released into an aqueous medium, and from which in turn they are absorbed by the appropriate spores, pollen grains or seeds. The evidence indicates that different activators are involved in the stimulation of different dormant tissues, and that each activator may be produced in the tissues of a large number of species. It is suggested that the activators are of importance in the metabolism of the stimulating as well as of the stimulated tissue, and the hypothesis is proposed that the dependence of the latter on an external supply of the activator is due to a failure to synthesize this or a similar substance. Tissues that do not require stimulation differ from those that do in synthesizing the essential substances in the course of development.

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OBITUARIES

Prof. B. A. Keller

PROF. BORIS ALEXANDROVITCH KELLER died in Moscow on October 29 at the age of seventy-one. He was a member of the Academy of Sciences of the U.S.S.R. and he was well known all over the world as the author of important works on geobotany and ecology.

Keller was born in St. Petersburg on August 28, 1874. He passed his childhood and youth on the Volga. The Volga landscape, and the broad steppes, made a deep impression on the young student, and he preserved all his life a special affection for, and interest in, the vegetation of steppes and semi-deserts. He graduated from the University of Kazan in 1902. Even in his undergraduate days he conducted researches in plant geography under Gordiagin. For eleven years he worked in the University of Kazan, first as assistant and later as *dozent*.

When the Voronejh Agricultural Institute opened in 1913, Keller was appointed to the chair of botany there. He held this post until 1931, when he was elected a member of the Academy of Sciences. He then became the director of the botanical institute of the Academy of Sciences, the most important botanical appointment in the U.S.S.R., formerly the St. Petersburg botanical garden. In 1936 Keller moved to Moscow, where he was entrusted with the organi ation of the new Moscow botanical garden. This post he held until his death.

In 1897 Keller began his plant geographical researches of the lower Volga, and in 1907 he published a remarkable book, "Semi-desert Regions", written in collaboration with a soil scientist, Dimo. In this book he first applied the now familiar method of 'ecological sequences' in describing vegetation; he also used the concept of vegetation complexes, later called "Sinuzia". Other work of Keller was conducted in western Siberia and the Altai Mountains. When he worked in Voronejh he brought out an excellent book on the vegetation of south-east Russia.

The chief characteristic of Keller's geobotanical researches is the emphasis he lays on ecological aspects. In his work on the Russian steppe he always allots a conspicuous place to the study of soil and climatic conditions and their determining effect on the vegetation; and in his work on halophytes he entered with distinction the field of experimental ecology. Keller founded at Voronejh an experiment station, where he continued to work intermittently even after his transfer to Leningrad.

In recent years, Keller interested himself in the study of evolution, particularly in ecological work bearing on evolution. It appears from his recent papers that he considered that environmental characters exerted some effect upon inherited modifications, though he did not under-rate the importance of natural selection, and he remained an ardent adherent of Darwinism.

Keller took part in international congresses of botany and soil science, and he published articles not only in Russian but also in several foreign periodicals. At the time of his death he was widely known and esteemed by botanists all over the world.

N. A. MAXIMOV.

(Translated by E. Ashby.)

I SHOULD like to add to Maximov's note a personal tribute to B. A. Keller. I called on him in his flat in Moscow early in 1945, and he gave me a friendly and generous welcome. He was a sick man, but he was enthusiastically working at a book on ecology and evolution. He was very anxious that I should become familiar with the flora around Moscow, and to that end he gave me his own copy of the handbook to the local flora, and instructions as to the places I should visit. We met several times during the year, and Keller was always willing to help me. I attended his funeral ceremony in the biological block of the Academy of Sciences; and it was clear from the speeches made there by his students and by a representative of workers from the botanic gardens, that Keller had great influence upon the younger generation of botanists, and that his name is not only honoured but also held in deep affection by those who knew him. E. ASHBY.

Dr. J. M. Derscheid

THE death has recently been confirmed of Dr. Jean-Marie Eugène Derscheid, professor of biology of the Colonial University of Antwerp, who was shot at the prison of Brandebourg on March 13, 1944, after thirty months imprisonment in Germany.

Derscheid was born at Sterrebeek on May 19, 1901, and from earliest youth showed a great propensity for natural sciences and art. At the age of seventeen he interrupted his studies to endeavour to join in the fighting by attempting to pass through Holland and reach the front behind the Yser, but was taken prisoner and was not liberated until the Armistice in 1918. In 1919 he began studying medicine, but later changed to take a degree in natural sciences.

In 1924 Derscheid was awarded the gold medal of the *Concours Interuniversitaire* for the period 1922–24 for his theses on the classification of birds and the olfactory organs of fish. During 1924–26 he acted as temporary keeper of the Colonial Museum at Tervueren, and in 1926 was appointed by the King of the Belgians to accompany the American expedition led by Carl Akeley to explore the volcanic region of Kivu. On the death of Carl Akeley, Derscheid took charge of the expedition, and the information he obtained contributed greatly to the creation of the Albert National Park, the first national park of the Congo. In addition, he was chief of the International Office for the Protection of Nature in Brussels.

Derscheid specialized in the fauna of the Belgian Congo, among the most important of his papers being "Recherches anatomiques sur l'Okapi. 1, Le caecum et la glande ileocaecale. 2, La rate" (*Revue de Zoologie et Botanique Africaine*).

He was also a singularly successful aviculturist and his collection of birds at Sterrebeek was justly world-famed. He was also no mean artist, and many of his ornithological articles were illustrated by his own drawings.

Derscheid was a fellow of the Zoological Society of London and of the Audubon Society of America, an honorary life-member of the Wild Life Preservation Society of Australia and was awarded the medal of the Société d'Acclimatation de France.

In 1940 Derscheid rejoined his regiment, and having fought into France was demobilized and returned to Belgium in the autumn of 1940. His perfect knowledge of English made him an invaluable aid to escaping British airmen, and in addition he gave considerable service in sending secret information to the Allies, with the result that he was arrested by the Gestapo in October 1941.

The tragic end of Derscheid's career will be both a loss to science and a grief to his colleagues, who will long remember his peculiar charm of manner and vital personality. PHYLLIS BARCLAY-SMITH.

Mr. A. J. W. Selley

ALFRED JOHN WILLIAM SELLEY died at Arundel, Sussex, on November 28 at the age of ninety-one. Born in Devon, Mr. Selley went to Bristol as a young man in 1874 and lived there until the war period.

Selley was a brilliant and ardent collector, and many exhibits in the City Museum, Bristol, are a silent witness to his devoted services over so many years. At first he concentrated on the surface flint implements of the Mendip area. He was intimately acquainted with the district and often would spend a whole day traversing and re-traversing a ploughed field so that every portion of it was inspected. Later in life he also took an interest in bygones of all ages, and due entirely to his passion for collecting, many an interesting object has been preserved. Science and history owe much to those who devote their leisure hours to the acquiring of facts and material. Selley was one of this small but energetic group.

Selley was a member of the Bristol Naturalists' Society for many years and was made an honorary member in 1939 in view of his distinguished services to the cause of local prehistoric studies. He was retiring and modest; he was essentially an individualist and loved to be alone in the open field for long hours searching for any object that awaited his keen observational powers. F. S. WALLIS.

WE regret to announce the following deaths:

Prof. A. M. Adamson, professor of entomology in the Imperial College of Tropical Agriculture, Trinidad, on December 24, 1945, aged forty-four.

Dr. P. Amaury-Talbot, an authority on Nigeria, on December 28, 1945, aged sixty-eight.

Dr. Thomas Barbour, director of the Museum of Comparative Zoology and professor of zoology, Harvard University, who was a foreign member of the Zoological Society of London, on January 8, aged sixty.

Dr. Leo Cernosvitov, a specialist on Oligochaete worms, on December 15, 1945, at Ascot.

Mr. R. C. Shannon, entomologist of the International Health Division, Rockefeller Foundation, and an eminent American authority on mosquitoes, in Trinidad, on March 6, 1945.