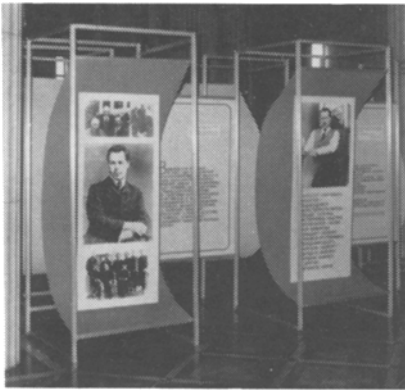


## Book Reviews

**Popovskij, M.: N.I. Vavilov und die Biologische Diskussion in der UdSSR.** Gekürzte Übersetzung aus dem Russischen, Titel des Originals: Delo Vavilova. Berichte des Osteuropa-Instituts an der Freien Universität Berlin. Medizinische Reihe, Heft 116. 1977. 201 pp., 8 figs. Soft bound DM 12,-



The recent XIVth International Congress of Genetics 1978 at Moscow State University was held under the auspices of the rehabilitation of Nikolaj Ivanovic Vavilov (1887-1943), the great Russian geneticist and plant breeder. Not only was a well-designed exposition in the most beautiful room of the main building of the Lomonossov University devoted to his scientific work and performance (fig.) but, in addition, the plenary session of the last day, held in the Kremlin Palace of Congresses, had the title 'N.I. Vavilov, Heritage in Modern Genetics'. Three discourses by F.Kh. Bakhtev, J. Harlan and D.D. Brezhnev, respectively, were devoted not only to the retrospective accomplishments of Vavilov but also to his contributions to present-day Soviet agriculture, to his role in the further development of genetics and to his studies on the origin and evolution of cultivated plants. It has become clear that his 'Law of the homologues series in genetic variation' was the first step to a better understanding of the origin of cereal crops. Gustafsson was clipped in the fourth presentation when he attempted to bring the scientific oeuvre of Vavilov into the right context. The book being reviewed must be considered in this context. It was written by Mark Popovskij who, as a member of a committee of the Academy, was able to obtain access to the archives of the 'case Vavilov', which had been formerly inaccessible. This report, which is now available in a German translation, was called by the nestor of the Russian history of medical sciences, Academician B.D. Petrov, 'the best-written work of the author'. With this in mind we read the book with increasing interest. It presents not only a short outline of the life of the brilliant organizer of collecting expeditions but also draws sketches of his most powerful opponent, T.D. Lysenko. It delves into the very details of those fatal discussions which led to the imprisonment and subsequent death by starvation of Vavilov in a prison at Saratov after the sentence to death had been reduced to 20 years of imprisonment. The author made a detailed investigation of the cynical treatment the great scientist received in the cellars of the State Security Service, the inquiry and the sentence procedure, which lasted 3 minutes. It becomes clear that it was political revenge, obtained by false wit-

nesses, and characteristic for the period of the 'person cultus' during the 30's and 40's.

Vavilov was a political person, which becomes evident from the fact that he met, corresponded and talked quite regularly with such high-ranking politicians as Stalin, Molotov and Berija. He must be considered a loyal Soviet citizen, although ironically as a convinced communist, he was sentenced as a trotskyist and monarchist. Subsequently this president of the All-Union Academy of Agricultural Sciences suffered a tragic fall from grace because he was not willing to betray his scientific conscience. His antagonist, the pseudoscientist Lysenko, proved to be stronger in bringing about this downfall.

The rehabilitation of Vavilov was slowly started in 1966. The recent genetic congress may be still a further step, one of great interest and value not only for geneticists but for biologists in general. The 'affair Vavilov' is still an insurmountable trauma of Russian biology. The details are not yet known to the Russians and the international genetic scientific community. The present book can contribute to a more objective approach. Despite the fact that it is an emotionally charged presentation, it gives the impression of absolute reliability. It should definitely be included in the discussions around the life, works and tragedy of N.I. Vavilov.  
H.F. Linskens, Nijmegen

### **D. de Nettancourt: Incompatibility in Angiosperms. Monographs on Theoretical and Applied Genetics 3.**

Berlin-Heidelberg-New York: Springer 1977. 230 pp., 45 figs., 18 tabs. Bound DM 56,-

Writing a monograph about such an interesting and much-discussed subject as incompatibility is admirable. The book provides the reader with much experimental data and underlines the present state of investigation.

In four chapters (2/3 of the book) self-incompatibility is described: basic features, genetics, morphology and biochemistry, modifications and mutations. One chapter summarizes the knowledge about interspecific incompatibility and presents similarities and differences of the various types of incompatibility barriers between species. Possibilities to overcome interspecific incompatibility and to produce hybrids are discussed. The final chapter is a brief review about self-incompatibility and interspecific incompatibility. The reader is introduced into the importance of incompatibility for plant breeding, into new techniques and new developments in incompatibility research.

It is not easy to provide information about incompatibility in only 200 pages. With the aim of surveying the whole complex of incompatibility in angiosperms, he has restricted himself to the main features and chosen some important examples. It is understandable that the author preferably uses his own results for the demonstration of problems. In an area of rapid progress, however, without promoting decisive insight into the molecular basis, a full agreement between author and reader is not always to be expected as, for example, in relation to evolution of incompatibility or mutation induction. Concerning the quotation of literature, regrettably the results of Günther and Jüttersonke (p. 177) are included in the chapter about induced mutation. The hybrids, however, were found using a self-compatible chimera.

The book is recommended to those wanting to get an up-to-date survey about incompatibility in angiosperms.

E. Günther, Greifswald

**Akihama, T., Nakajima, K. (eds.): Long term preservation of favourable germ plasm in arboreal crops**  
Fruit Tree Research Station 1978 Yatabe Ibaraki 300-21, Japan 152 pp., 51 figs., 80 tabs.

In 1973, 6 institutions of the Ministry of Agriculture and Forestry began a five-year research project on a multi-institutional base in order to investigate the problem of maintaining indispensable material of arboreal crops for future use by breeders. Gene conservation of herbaceous crops such as rice, wheat, barley, potato has made great progress in the last few years, but basic information on arboreal crops is still lacking. This programme has gained increasing importance because local and old cultivars of fruit and forest trees, tea and mulberry have to be kept alive as desirable gene resources for pest and disease resistance, tolerance to adverse environmental conditions, specific morphological and physiological features and ease of vegetative propagation.

The report presented contains 16 articles with original results and 6 containing material already published elsewhere. The long term preservation of arboreal crops can occur by the storage of pollen samples (fruit trees, Citrus, Chamaecyparis), seeds (pear, apple, Citrus, persimmon, conifers, Quercus), root cuttings (tea) and shoots (fruit trees, mulberry, tea). Preservation in the form of suspension cultures and excised buds is also very promising. Some of the results have possibilities for immediate application while others are more fundamental and can perhaps be applied to other crops also. Long-term pollen storage is best accomplished by freeze-drying, as well as seed storage under extra-low temperature. The water content is critical and should be controlled. Under storage and dormancy conditions the major stumbling block in protein synthesis is the absence of certain types of m-RNA. Roots of tea can be maintained alive for at least for 5 years kept at 5°C in vinyl bags. For the survival of suspension-cultured cells it is essential that the cells used for the immersion in liquid nitrogen are at the later lag-phase or in an early cell division phase.

The necessity to maintain germ plasma of tree material will increase in the near future when extensive breeding programmes are designed. It will become a question of efficiency to have the most fail-safe and space-saving preservation methods. The Japanese breeders are fore-runners in this field. H.F. Linskens, Nijmegen

**Alberda, Th., et al.: Crop photosynthesis: methods and compilation of data obtained with a mobile field equipment. Agricultural Research Report**

Wageningen: Centre for Agricultural Publishing and Documentation 1977. 46 pp., 34 figs., 5 tabs. Soft bound ca. DM 10,-

This small booklet summarizes the results of crop photosynthesis measurements the authors have performed for 4 years using stationary as well as mobile field equipment for IR-gas analysis. The results are concerned with 7 different crops, including grass, cereals, potatoes, flax, sugar beet, and stubble turnips. Primarily light response curves at different seasons and developmental stages, respectively, as well as values documenting the relations between daily light and temperature fluctuations and photosynthetic activity are presented. Facing the difficulties of crop photosynthesis measurements in the canopy, the authors do not claim to publish defined experimental results for so many different crop

plants after only a few years of experimentation but the temporary compilation of data so far accumulated seems to be a valuable contribution to the field of plant productivity. An initial chapter presents outlines of the methods. A brief list of references provides information on different full-length papers published by Dutch authors that form an already well-known school for plant productivity investigations. K. Müntz, Gatersleben

**Sixty-eighth Annual Report, 1977**

Norfolk: *John Innes Institute* England 183 pp. 55 figs., £ 2,50

The yearly bulletin of this famous research institute which was founded in 1910 is always a pleasure to read. Its move to Norfolk due to its association with the University of East Anglia and the addition of the A.R.C. Virus Research Unit from Cambridge nearly doubled the size of the original staff. This is reflected in the number, size and quality of the research reports about the studies being undertaken in the institute. The reports are grouped into compatible sub-units: peas, fruit and ornamental plants, micropropagation, anther and pollen culture, Rhizobium, plant pathogens, Spiroplasmas and Mycoplasmas, plant protoplasts, cell wall structure, image analysis and interpretation, covering a wide field of fundamental aspects of plant breeding. These reports are rather specialized in content but readers are invited to direct questions to the workers concerned. Thus, this annual report is at one time an account and an open ear. It is completed with detailed information on the governing council, staff, seed lists, the library and publications, all very well presented.

As well as being a fine example of public and college information, the John Innes Institute Report is simultaneously a look into the kitchen of a well co-ordinated, broadminded breeding institute. H.F. Linskens, Nijmegen

**Singer, Sam: Human Genetics**, An introduction to the principles of heredity.

San Francisco: W.H. Freeman 1978. 139 pp., 84 figs., 11 tabs. Soft bound \$ 5.50

On the back cover of this book it is written: 'A historical approach is used throughout'. Most Europeans will welcome this from a young American author but will be slightly disappointed by his inexactness. 'By about 1910 or so' page 20 is rather vague. Barr bodies were first seen in 1947 ('in the late 1940s', page 43) and lead to the inference (not 'the discovery', p. 35) in 1949 that abnormal sex-chromosome constitutions existed in man. The inverse of the inference was discovered in 1959 after that the exact number of chromosomes in man was found in 1956 (page 9). Why are the names not mentioned of 'the European who first described Down's syndrome' (page 23) and 'the Swiss biochemist' who discovered nucleic acid (page 49)? If an author is claiming a historical approach a more exact handling should be expected. These critical notes will not detract from the content. The illustrations and examples in the text are interesting and informative. However, some minor mistakes (sex-limited instead of 'sex-influenced' on page 39) and unclear statements ('only one different amino acid' page 62) are noticeable. This book can indeed be recommended to anyone with enough interest in the subject. S.J. Geerts, Nijmegen