Book Reviews

Stegemann, H.; Loeschcke, V.: Index of European Potato Varieties. Identification by electrophoretic spectra. National registers; Appraisal of characteristics; Genetic data. 1. Ed.
Berlin, Hamburg: Paul Parey 1976. 214 pp., 4 tabls., 73 Pherogramm tabls. Soft bound DM 25,- + MWSt.

This book contains a wealth of information on more than 600 registered European potato varieties (except those from USSR). In addition the authors give a detailed description with illustrations of an electrophoretic procedure for identifying potato varieties on the basis of protein and esterase banding patterns respectively. Protein and esterase spectra (nearly 1000 each) are given from tubers of all varieties registered through 1975 in the 12 most important European countries, using Maritta as a standard on each of the 73 plates.

Table 1 lists in alphabetical order all varieties registered and mentions the countries and the class of band grouping into which the protein spectrum of each variety can be placed. Table 2 presents figures for physiological properties (maturity, readiness to sprout, colour of skin and flesh, tuber shape, eye depth and starch content) and phytopathological data. All data are graded from 1 to 9 according to the system used in Germany and the Netherlands. This is very convenient because a uniform scoring system facilitates comparison of data from different countries. The breeders (addresses in Table 4) and the ancestry of all varieties are included in Table 3, which also indicates which related Solanum species are involved. The Tables 1-3 inclusive have the same lay-out. This enables the reader to quickly collect all data presented about a given variety in these tables.

Both the German and English language are used throughout the book. This makes its highly valuable contents accessible to most students, scientists and practical breeders in the world.

J.G.Th. Hermsen, Wageningen

Gunter, F.A. (Ed.); Davies Gunter, J. (Asst. Ed.): Residue Reviews - Residues of Pesticides and Other Contaminants in the Total Environment. Vol. 64.
New York, Heidelberg, Berlin: Springer 1976.
142 pp., 9 figs., 15 tabs. Bound DM 41,--

In the paper "Collaborative studies of methods for pesticides residues analysis" by N.A. Smart reasons are given for the importance of thoroughly establishing these methods, particularly as national and possibly international tolerances are now being set. The results of recent AOAC and UK work are summarized in detail: AOAC colorimetric, GLC and more recent work, and early and GLC UK work. The variations that arise between analysts and laboratories are discussed, drawing attention to having as complete a description of the method as possible to reduce the variations. Criteria for the acceptability of results from collaborative study are difficult to arrive at but some generally used guidelines are given. The need for further collaborative studies of commonly used residue methods is stressed.

By C.M. Tu et al. a survey is given of "Interactions between insecticides and soil microbes". Insecticide effects on soil microbial activities (population, mode of action, respiration, ammonification, nitrification, denitrification, nitrogen fixation) and soil microbial degradation of insecticides (evidence of insecticide degradation by soil microorganisms, biomagnification, effects of environmental factors on degradation of insecticides) are reviewed. Much of this work has been confined to laboratory studies and has yet to be translated into the development of more effective measures in the reduction of insecticidal residues in the field.

J.I. Willard et al. give a short review of "Benzoxazinones: Cyclic hydroxamic acids found in plants", naturally occuring compounds such as glucosides or aglucone, possibly influencing insect and disease resistance and detoxication of triazine herbicides. Although a rapid and inexpensive assay for the quantitative determination of benzoxazinones content in plant tissue has not been developed, such a method presents great potential for the screening of many crop lines for resistance to several pest problems.

The extensive survey "Nitrosamines in foodstuffs" by N.T. Crosby discusses a problem associated with the use of food additives, nitrate and nitrite, which by subsequent chemical reactions in the food or the alimentary system may result in the formation of residue quantities of N-nitrosamines. The following topics are discussed in detail: chemistry of N-nitrosamines (synthesis, structure, general properties, chemical reaction), biological properties (acute toxicity, subacute effects including carcinogenic and transplacental effects), metabolism and biochemical effects, occurence and interaction of precursor materials in the environment (nitrites and nitrates, amines, formation of nitrosamines in vitro and in vivo), analytical methodology (methods of isolation, cleanup and concentration, identification and estimation, derivative methods, collaborative studies), occurence of nitrosamines in foods (fish and fishmeal, meat products, other foods), nonvolatile nitroso compounds and C-nitroso compounds. The formation of nitroso-pesticides is not referred to in this paper. W. Dedek, Leipzig

Gunter, F.A. (Ed.); Davies Gunter, J. (Asst. Ed.): Residue Reviews - Residues of Pesticides and Other Contaminants in the Total Environment. Vol. 63.
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192 pp., 54 figs., 30 tabs. Bound DM 41,--

G. Vettorazzi includes the carbamate and organophosphorus (OP) pesticides used in agriculture and public health in the review "State of the art of the toxicological evaluation carried out by the Joint FAO/WHO Meeting on pesticide residues". Criteria for evaluation and potentation and comprehensive toxicological reviews are given, including ADI and no effect level of 47 compounds. - The monography "Kelevan" by H. Maier-Bode comprises synthesis, physico-chemical properties, insecticidal action and formulation, effect on warm-blooded animals, behaviour in the environment, residues in agricultural products, tolerances and analysis of formulations and residues. The insecticide Kelevan cannot be compared with the persistent insecticides from the chlorinated hydrocarbon (organochlorine) series in its toxic characteristics, in the persistence of its redidues in the soil, plants and animals, as well as in the accumulation in the fat and lipids of the animal or plant organism. -

By J.M. Desmarchelier et al. the current status of mass spectra of organophosphorus esters and their alteration products is reviewed containing the mass spectra of OP compounds by classes: phosphinates, phosphonates, phosphates, phosphorothiolates, phosphorothionates and phosphorodithioates and OP-compounds with a single P-N bond, including 54 figures of MS of special OP compounds. W. Dedek, Leipzig

Gaul, H. (Ed.): Barley Genetics III.
Proceedings of the Third International Barley Genetics Symposium 1975.
München: K. Thiemig 1976. 849 pp., 270 figs.
Paperback DM 130,--

The Barley Genetics Symposia are held every 6th year and provide, together with the yearly publication of the Barley Genetics Newsletter, the coordinating link between barley geneticists and barley breeders. This volume mirrors adequately the advantages of barley as an experimental organism in plant genetics and the areas in which major advances are necessary to provide for a better genetic basis to improve this crop.

Dr. Gustav Wiebe has been a central and leading personality in barley genetics and breeding for many decades. His last two papers are contained in this volume, which is dedicated to his memory.

Genetic engineering has become the melody of the day and high hopes are put to it for drastic crop improvements. Barley is one of the few plants in which haploids can be produced in unlimited quantities by species hybridization, chromosome elimination and embryo culture (Lange, Kasha, C.J. Jensen, E. Reinbergs, Fukuyama, Takahashi). The production of haploids and their use in barley breeding is excellently presented in the volume. Also since protoplast formation from haploid barley leaves is easily achieved, major advances in the selection procedures of rare disease resistant mutants or complex recombination products are to be expected.

This readiness by which single gene mutants can be induced and propagated make barkey a suitable higher organism for biochemical genetics. The volume illustrates this for epicuticular wax synthesis (von Wettstein-Knowles), esterases (Edwards, Kahler, Allard), flavonoid synthesis (Jende-Strid), growth hormones (Favret), storage proteins (Kreft, Munck, Karlsson, Doll, Ingversen, Scholz, Walther and others). The latter mutants are increasingly used to explore the chemical basis for feed and malt quality.

Barley is one of the organisms in which the mutagenic action of ionizing radiations has been first asserted. It still holds a leading position in mutation research as shown by the 23 papers devoted to this topic. In 1975, 36 commercial barley varieties could be counted which contained an induced mutation (Sigurbjörnsson). In sodium azide a most remarkable mutagen has been discovered in barley by Nilan and coworkers. It seems to induce exlusively point mutations at a very high frequency. Barley is also the only higher organism for which quantitative data are available to compare the effectiveness of ionizing radiations and chemical mutagens on forward mutations at individual genes (Lundqvist). Chromosomal aberrations continue to provide help in gene and chromosome mapping as evidenced by 18 papers presented.

The genetic analysis of disease resistance, especially towards powdery mildew and applications for breeding of disease resistant varieties, were a prominent theme at the symposium (19 contributions). Advances and problems in the development of hybrid barley are treated comprehensively (R.T. Ramage, P. Hagberg, G. Hagberg, L. Lehmann, B.A. Karlson, C.A. Foster and others).

The symposium proceedings also provide room for experiments with negative results and entertaining speculation that would not be printed in a standard journal. D. von Wettstein, Copenhagen

Jalbert, J.; Sele, S.; Feingold, J.: Exercises Programmes de Génétique Médicale.
Paris: Masson 1977. 108 pp., 33 figs. Soft bound (Snolin): 29 ffr

In 16 exercises and 166 answers 25 subjects in human genetics are treated. It is regrettable that the main body of information in the 166 answers is not accessable through a subject index. Deliberately and understandably the order of the answers, right or wrong, is mixed. For exercice no. 5 for instance the 10 subquestions respectively belong to two subjects and 23 answers on as many different pages and that makes it rather tedious to study all aspects, pitfalls as well as good expositions, of a specific exercise. So this booklet (105 pages) is indeed for exercice by students who want to train for an examination. The teacher can learn most from the many wrong answers.

S.J. Geerts, Nijmegen

Announcements

Assinsel Award

The International Association of Plant Breeders for the Protection of Plant Breeders Rights (ASSINSEL) decided on May 27, 1977 in Monterey, Cal., U.S.A., to create an award for research work in plant breeding amounting to SFr. 5'000.-. The award is to be granted to scientists who made a considerable contribution to the improvement of plant breeding methods by basic research over the past 4 years, practical breeding work or breeding results are excluded from the award.

The ASSINSEL award will be granted for the first time at the occasion of the ASSINSEL General Assembly in Hamburg, F.R.G., in May 1978.

Relevant publications can be mentioned by authors, scientific research institutes or members of ASSINSEL until December 1st, 1977, and addressed to ASSINSEL, Poststrasse 10, CH - 4500 - Solothurn, Switzerland.

The decision on the publication that will receive the award will be taken with the assistance of an international jury of 3 scientists. Their decision is irrevocable.

The ASSINSEL AWARD Committee

The Chairman,
Ir. J.E. Veldhuyzen van Zanten