Book Reviews

Dye, A.F.: Investigating Chromosomes.
London: E. Arnold 1979. 138 pp., 37 tabs. Soft bound £ 6.75
The author presents methodical procedures together with applications of light microscopical cytological investigations in animals and angiosperms. The work is divided into four main sections and three appendices. The appendices give valuable tabulated surveys of the best developmental conditions for the investigation of chromosomes in angiosperms and a few important insect species, surveys of cultivation of selected plant species and of films showing the course of mitosis and meiosis.

In the first chapter the author deals with the preparation of the animal and plant material for the investigation of the chromosomes, especially obtaining the material, pretreatment, fixation, staining and production of chromosome slides, including modern staining methods such as Giemsa staining techniques. In the second chapter we find descriptions of results on replication, coiling, allocyclic chromosome condensation, normal mitotic courses, modifications through the angiosperm life cycle and meiotic courses. In the third chapter Dyer presents investigations of karyotype analysis, chromosome number, chromosome size, other morphological chromosome attributes, pairing and distribution of chromosomes in the meiosis, and chromosome mutations and their evolutionary significance. In the fourth and last chapter the author illustrates results of investigations of the duration and timing of the mitotic cycle, chiasma formation, pollen fertility in polyploids and inheritance mechanisms of B-chromosomes.

This book deserves to be read, because the author has prepared the material for investigating chromosomes in an unusual manner: Dyer has shown the reader the multiplicity of problems which the scientist can solve by light microscopical investigations of chromosomes, selecting particularly appropriate subjects and describing their methodical preparation. The excellent choice of examples and the didactically very vivid presentation of the results are completed by clear tables and exemplary microphotographs of chromosomes. The author prefers the presentation of results in angiosperms for the simple reason that he works on plant material. I must mention critically that the author makes a partial and very subjective selection from the bibliographical data. For instance he does not cite important articles and reviews in the research field of B-chromosomes. On the whole the referee can unreservedly recommend the book for students and teachers and wishes Dyer's work a very wide distribution. C.U. Hesemann, Stuttgart

Hartmann, W.: Die Aufzuchtziffern von schwarzköpfigen Fleischschaf- und Finnkreuzungslämmern unter Berücksichtigung von Genanteil, Ablammergebnis, Wachstum, Hämoglobin- und Blutkaliumtypen. Bd. 39.
Berlin, Hamburg: P. Parey 1977. 96 pp., 11 figs., 16 tabs. Soft bound DM 20,–
Large-scale crossbreeding experiments are currently under way to improve lambing and rearing results and generally increase weight in store lamb production. Those who intend to extend their knowledge of lamb production would be well advised to read this book. The effect of different proportions of genes from Finnish and milk sheep is discussed in detail with particular reference to black-headed mutton sheep. Also, an attempt is made to elucidate biochemical causes of the above parameters from investigations into hemoglobin and blood potassium types.

By using population genetics models, it is possible to show the following influencing factors: Mating date, age of ewe, proportion of genes – these are factors affecting the result of lambing. Sex, type of birth, age and weight of ewe, genotype, and weight of lamb at birth – these are factors affecting the result of rearing. Genotype and type of birth of lamb – these are factors affecting the increase of weight.

It was not possible for a consistent relationship with efficiency to be determined from investigations of hemoglobin and blood potassium types, although as regards the particular type of potassium, so-called 'LK' lambs tend to have a positive influence on weight development.

It is the purpose of this book to make a major contribution to elucidating the wide variety of genetic and biological interrelations which enable the sheep breeder, within the framework of a step-by-step program, to increase the rate of rearing without economic disadvantage to the weight development of lambs.

H. Brandsch, Leipzig

Gunther, F.A.; Davies Gunther, J. (Asst. Editor): Residue Reviews. Residues of pesticides and Other Contaminants in the Total Environment. Vol. 71.
Berlin-Heidelberg-New York: Springer 1979. IX, 181 pp., 29 figs., 28 tabs Hard bound DM 44,–
In the first paper of Vol. 71, 'Chemical methods for the analysis of veterinary drug residues in foods, Pt. 1', by J.J. Ryan and H.A. McLeod, the antiprotozoal (I), anthelminthic and systemic pesticides (II) and miscellaneous drugs (III) used in domestic animals are reviewed. The following classes of chemical compounds are given: I (benzamides, imidazoles, thiazoles, pyridines and pyrimidines, quinolines, quinoxalines); II (heterocyclic compounds, organophosphates, phenols); III (antioxidants, antiseptics, synergists, tranquilizers, anesthetics, stimulants). The methods of chemical analysis are given in principle and the complete literature is attached. Two other papers deal with the environmental aspects of chemical pollution. 'Physical and chemical properties of fly ash from coal-fired power plants with reference to environmental impacts' by A.L. Page, A.A. Elseewi and I.R. Straughan contains the physical and chemical properties of fly ash with extensive results of trace element concentrations (18 tables). In the environmental impact assessment, atmospheric emission and the effects of fly ash on growth and mineral composition of plants are discussed. In the review 'Impact of biological and chemical mosquito control agents on nontarget biota in aquatic ecosystems' by M.S. Mulla, G. Majori and A.A. Arata, the management of such agents used for the suppression of pest and vector mosquitoes in aquatic habitats is analyzed. Biological control agents (fish, macro-invertebrates, nematode parasites and microbial entomopathogens) and chemical mosquito larvicides (petroleum hydrocarbons, organochlorine, organophosphate and organocarbamate larvicides, insect growth regulators or insect developmental inhibitors and natural and synthetic pyrethroides) are reviewed and environmental and biological effects of certain petroleum larvicides, organophosphates, insect growth regulators and pyrethroids, as well as of some herbicides, are given in detail. W. Dedek, Leipzig