

contrast to the control group. A whole chapter is devoted to overtiredness, due to diffuse, routine domestic work, which leads to frustration, and it is found that work outside the home, even part-time, results in a freshness of outlook and not in extra fatigue.

In the discussion, the need is stressed for a sane compromise between the biological aspects of a woman's life, as a mother carrying on the race, and the intellectual side developed by a university education.

It is suggested that modern emphasis should be on the diversity, rather than the identity of the sexes, and that a girl's education should enable her to evolve from the exclusive femaleness of the family stage, where, however, intelligence is not wasted, to the fulfilment of a wider personality later in life, given sufficient stamina, patience and a sense of proportion.

Practical issues are dealt with, and it is shown that the effect of the change in the balance of the population from a surplus of women to a surplus of men with the present early marriage-rate will lead within the next twenty years to a shortage of unmarried women of professional status, so that it will be more and more necessary to adapt conditions to the employment of married women. One essential change will be in the system of assessing income-tax paid by a married woman.

By collecting actual facts, Mrs. Hubback has done valuable work in raising this subject one step above the surmise and prejudice usually associated with it. From the trends observed, although the sample is small and not claimed to be statistically perfect, she draws valuable information leading to the conclusion that, while admitting the educational dilemma due to her probably dual role in life, an intelligent girl should be educated to the highest level of which she, as an individual, is capable and that she should continue her education to qualify for professional status. Because the author herself and the majority of her sample are at the family-raising stage she puts, perhaps, too low a value on the potentialities of highly educated women. It would be interesting and possibly more encouraging to career-minded girl students to have a further survey of the careers followed at the next stage, later in life, when so many professionally trained married women are tending to return to outside work.

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THE SCIENCE OF COSMETICS

Cosmetics

Science and Technology. Edited by Edward Sagarin. Pp. xix+1433. (New York: Interscience Publishers, Inc.; London: Interscience Publishers, Ltd., 1957.) 25 dollars.

THE avowed intention of the editors of this volume is "to bring together a number of authorities each of whom has acquired a thorough familiarity with some special phase of cosmetics or of some related science or technique". In this object they appear to have succeeded since sixty-one men and women have written fifty-three chapters covering the whole range of cosmetics.

This very large quantity of material is subdivided into five parts: 1, The Scope of Cosmetics; 2, Toilet Preparations; 3, Manufacture and Technology; 4, Physiological Considerations; 5, Legal Considerations.

Part 1 includes a chapter on the origin and development of cosmetic science from the days of the Egyptian and Babylonian Dynasties until the nineteenth century when the basis of modern cosmetic formulation begins to appear.

The major part of the book is to be found in Part 2. Fifty types of cosmetic preparations are grouped into thirty-five chapters, two or more allied preparations being incorporated together in some chapters. Each chapter is prefaced by a discussion of the requirements of the preparation to be compounded. This discussion involves a consideration of pharmacology, of presentation and of storage problems.

A lengthy chapter is included on aerosol cosmetics. This contains a discussion on the various types of propellants, the advantages and disadvantages of each, with numerous graphs showing the vapour pressures of various mixtures of these propellants. Types of containers and production methods are also considered. The chapter also includes a glossary of terms used in the aerosol industry—terms approved by the Chemical Specialities Manufacturers Association.

The numerous and varied formulæ are well set out in the text with the reasons for the inclusion or exclusion of any particular ingredient. Manufacturing instructions are given for nearly every formula, and where they are not included they can be deduced from similar formulæ.

Part 3 includes a very useful chapter on quality control emphasizing the necessity of statistical analysis. The subject of statistics is treated in as simple a manner as possible—formulæ are given but not proved. Consideration is given to the standard deviation, the Student *t* test, confidence limits, correlation and regression lines, analysis of variance. Useful information on the design of experiments is supplied.

Part 4 includes chapters on "The Physiology of Olfaction", "Hormones in Cosmetics" and "Sensitivity Testing". Part 5 includes a chapter on American patents and trade marks and a copy of the relevant parts of the Federal Food, Drug and Cosmetic Act, 1955.

The editing of the book has been extremely good, and little overlapping of information occurs in its many chapters. Each chapter is fully and widely referenced. The theoretical knowledge given, where it is required in each chapter, is generally good, although occasionally it is a little ambiguous when emulsions are being considered, but as the book is essentially one of cosmetic practice, these statements do not interfere with its usefulness.

The line diagrams are clear and well annotated; the graphs and tables self-explanatory. The photographs are good, although pictures of large-scale plant are not very enlightening. In the photographs of the mineral oil emulsions, two reference letters are missing.

An index of trade names is given, including details of chemical composition and manufacturers' names and addresses. The author index appears to be complete and is certainly well cross-referenced. The subject index is extensive, but, and this is probably the most serious fault with the book, it is not complete. Many substances are mentioned in several places in the text but only receive one reference in the index. Some substances are, unfortunately, mentioned in the text but not in the index.

These faults apart, the editors can congratulate themselves and the authors on producing a book which cannot help but be of great use to every cosmetic manufacturer (or would-be manufacturer) throughout the world.

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