

BOOK REVIEW

G. F. Sensabaugh,¹ D.Crim.

A Review of Keratins. Their Composition, Structure and Biosynthesis

REFERENCE: Fraser, R. D. B., MacRae, T. P., and Rogers, G. E., *Keratins. Their Composition, Structure and Biosynthesis*, Charles C Thomas, Springfield, Ill., 1972, 304 pp.

The forensic analysis of hair and feather usually begins and ends on the stage of a microscope. Accordingly, the forensic scientist often knows little more about these materials than their gross and comparative morphology. In this book, hair and nail, feather and scale are viewed from a completely different perspective; they are described at the molecular level.

Hair, feather, and related tissues are in great part made up by a class of proteins called the keratins. This book presents a rather thorough account of the current state of knowledge about the keratin proteins, their chemical and physical structure, and their contribution to tissue morphology. The chapter topics include the following: The chemical and physical properties of keratins in various tissues, the biosynthesis of keratins, the evolutionary relationships of keratins, and the histology and fine structure of keratin-containing tissues. The authors are well qualified to discuss these topics since they have been leaders in keratin research for many years.

Given the emphasis on the molecular characterization of the keratin tissues, the book will be of interest to forensic scientists interested in understanding how the morphology of hair, feather, and so forth is determined. In addition, it will be particularly valuable to the forensic scientist contemplating research on hair at a molecular level. There exist reports in the nonforensic literature that electrophoretic analysis of chemically derivitized solublized keratins can be used for species differentiation [1,2] and for individualization [3]. It is inevitable that attempts will be made to follow up on these findings in the forensic context and this book, better than any other, can introduce the would-be researcher to the geography of the terrain.

References

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- [2] Day, T. H., "Interspecific Variation in the Hair Proteins," *Comparative Biochemistry and Physiology*, Vol. 43B, 1972, pp. 361-367.
- [3] Baden, H. P., Lee, L. D., and Kubilius, J., "A Genetic Electrophoretic Variant of Human Hair and Polypeptides," *American Journal of Human Genetics*, Vol. 27, 1975, pp. 472-477.

¹Assistant professor, Forensic Sciences Program, University of California, Department of Biomedical and Environmental Health Sciences, Berkeley, Calif. 94720.